American Aviation

The Independent Voice of American Aeronautics **JANUARY 1, 1945**

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Time for Judgment

Fortnightly Review

THE FIRST three months of 1945 are likely to be as important to the aviation history of the United States as any three months since 1903. For it is in this coming period that the future direction of our international air policy will probably take form.

It is time for mature judgment, of courage of convictions, of full consideration of this country's position in world air commerce. We have much at stake. And there is an obligation, as well, to lay a pattern for development that will not disillusion a great many thousands of American men in uniform around the world who have high hopes of participating in this new vast field of opportunity.

It will be a period of bitter name-calling, of spoken half-truths, of poorly-considered allegations, of selfish objectives. The pressures exerted on the Senate to negate the results of the Chicago conference will be considerable.

But in all of the discussions—too many of which, unfortunately, will be behind the scenes instead of in open debate—the various airline interests should keep uppermost in mind one compelling thing: the public has made possible the airlines of the United States. The airlines are public carriers. They were encouraged and aided by large original subsidies to develop in the national interest. They are not the sole properties of individuals, regardless of ownership or regardless of the amount of initiative that has gone into their development. They have been made possible by the public.

It is a *national* interest that is at stake, and it is private enterprise that must assume a responsibility in that

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Heads NWA Trunk Line

Croil Hunter is president and general manager of Northwest Airlines, which has been granted a transcontinental route. (Story on page 46)

Late Bulletins

TWA, C. & S. Interchange

An application has been filed with CAB by TWA asking approval of an equipment interchange agreement between TWA and Chicago & Southern Air Lines. The interchange would provide through service from New York to Houston via Indianapolis.

PAA and American

Public counsel has recommended in the CAB's North Atlantic Case that Pan American and American "or a company controlled by American" operate the CAB's four transatlantic routes. Each would get two routes. New York would be the only U. S. point on Routes 3 and 4, and Chicago, Detroit, New York and Boston would be put on the others.

Jet Development: Information on developments in jet propulsion and the scope of proposed development continues to be made public in driblets, largely through Congressional sources.

Trend of The News

The Navy has asked an appropriation of $34,000,000 for expanded jet engine plant facilities, it was disclosed with publication of hearings on the First Supplemental Appropriation Bill for 1945. National Advisory Committee for Aeronautics has requested $3,765,000 for special facilities to test jet and gas turbine engines.

Without mentioning the types of planes involved, Rear Admiral D. C. Ramsey told a Congressional Committee last fortnight that top speeds of Navy fighter planes have been increased by 100 mph, and that they are expected to reach the speed of sound in the near future.

Tire Trouble: Add another one to the long list of shortages which have plagued the aircraft production program. This time it is a shortage of airplane tires.

Gen. H. H. Arnold, commanding general of the AAF, last fortnight for the first time officially warned that with the nation's rubber stockpile dipping below the minimum supply requirement of 100,000 tons for next year, "We are now consuming airplane and truck tires at a rate which cannot be met, even with all plants producing to the absolute limits of their facilities."

NAWPC Continues: Definite decision to continue operations of the National Aircraft War Production Council and of the East and West Coast Councils was reached during the past fortnight.

Named as acting manager of NAWPC was Richard C. Palmer who has served in an important capacity in the Council's Washington office since its inception. (In the organization setup his title has been secretary-treasurer.) Since Sept. 1 he has handled the Council's work and Frank F. Russell has continued to act as manager in a consulting capacity.

The resignation of Russell as manager, tendered by letter to all aircraft company presidents on the Council Board, was accepted at a Board meeting in New York Dec. 20. Russell plans to leave for Peru early in January in connection with his duties, assumed Sept. 1, as president of Cerro de Pasco Cop-

(Turn to page 4)

25c

ONLY THOSE THUNDERBOLTS

COULD HAVE SAVED OUR BACON THIS MORNING!

"You all know how bad A-2 needs pictures for the big "blitz" they're planning... The C.O. told us to get 'em ...and he don't mean maybe... It was another job of sweating it out, and brothers did we sweat... the flak looked like a solid wall and about the time we managed to sneak through and get a couple of swell takes, things began to happen... A flock of those one-o-nines that Heinie's been saving, took us on as their personal meat... my port number two quit cold... starboard number one started smoking... our navigator copped a packet, the intercom went... then, just as I was begining to wonder what a shor'nuff pair o' wings would feel like, assorted hell broke out among Schickelgruber's spiteful lads... One burst into flame off my port wing, a gent making a head-on run disintegrated ... and by the time I limped around and headed for home, two more Jerrys were spinning down and the rest of the visiting firemen hightailed away from there... Believe me, chums, I was between a gulp and a prayer when two *P47's, who'd apparently been the total rescue squad, lined up over our tail, proceeded to wet nurse us home, and, as though it were just another routine chore, flipped around and went calmly back to the wars."

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As people expand their travel in the boundless ocean of air they gain in commercial, political, cultural and spiritual exchange never before possible. We invite you to go forward in 'forty-five with American Airlines.

* * *

American Airlines Inc. has ordered 55 four-motored Flagships — DC-4's and DC-6's. Deliveries of the DC-4 Flagships are scheduled to start about June. The DC-4 will accommodate 44 passengers; the DC-6, 56 passengers. The DC-4 will cruise at 250 miles an hour on scheduled flights, and the DC-6 at more than five miles a minute. We plan to operate DC-6's on regular schedules from coast to coast in approximately 8½ hours and on all of American's other national and international routes. The new Flagships will provide the most modern refinements in passenger appointment for maximum comfort.

AMERICAN AIRLINES *Inc.*

THE NATIONAL AND INTERNATIONAL ROUTE OF THE FLAGSHIPS

Trends

(Continued from page 1)

per Co. and Cerro de Pasco Railway Co.

Aircraft company presidents were almost unanimous in their views that nothing should be done to curtail the work of NAWPC as long as intense war production is needed.

Headquarters will be continued at 606 American Bldg., Washington, under Palmer's direction. Palmer became Washington representative of the West Coast AWPC shortly after its inception, and when the National Council was formed went with it.

WPB Industry Division: The aircraft industry will start the new year with a full fledged division of its own within the War Production Board for the first time.

Henry Nelson, formerly materials coordinator for the National Aircraft War Production Council, has accepted appointment as director of the Division and will begin his work shortly after the first of the year. He will be assisted by M. H. Wilner, formerly a major in the Air Forces, who has been serving during the past month as deputy director. Nelson is well acquainted with aircraft production problems, is a close friend of WPB Chairman J. A. Krug, and the industry in general looks forward to a cooperative program.

The reorganized Aircraft War Production Board also will continue to function within WPB. Importance of the industry division lies in the preparations it can make in helping guide reconversion of the industry—and especially in advance preparation for reconversion.

Heretofore the aircraft industry has been the only major industry in the U. S. without a direct voice in Governmental agencies where postwar production is involved. All other industries have had their WPB advisory committees for many months.

Postwar Plant Use: One possible postwar method of utilizing the vast Government-owned aircraft factory space is being explored at San Diego, Cal.

Recommendations have been filed with the Senate Small Business Committee by business and labor leaders of San Diego proposing that the City of San Diego or a group of local citizens operate the Consolidated Vultee Corp. Plant 2 as a center for small industries in the postwar period.

It is estimated by J. Harold Peterson, chairman of the San Diego Chamber of Commerce Industrial Committee, that Consolidated Vultee personnel might be cut down when war contracts end from 45,000 to possibly the crew of 5,000 that it employed before the war. Much of this force could be put to work in small industries to be located in the abandoned plane plant. He proposed that either the city or a group of citizens buy the building from Defense Plant Corp.

Indicative of the sentiment back of this move are the signers of the recommendations sent to the Senate Committee, who included: Robert E. Noonan, secretary of the San Diego County Federated Trades and Labor Council; George T. Forbes, president, and John N. D. Griffith, secretary-manager of the San Diego Realty Board; C. G. Morehouse, president of the Standard Parachute Corp.; H. I. Mandolf, development engineer of the Langley Corp., and J. H. Barton, assistant secretary and treasurer of the Electric Supplies Distributing Co.

P-40 Still a Hero: Everyone knows the role the Curtiss P-40 played in the early days of the war. This rugged fighter was not a good match for high-altitude combat with the lighter and more maneuverable Jap Zero, but it did its best and turned out a good job at every opportunity, and especially at lower altitudes. The P-40 is now out of production. But here is the surprise: the P-40 is back in the limelight on Leyte. During the extensive stretches of low ceiling weather, the P-40 is the only fighter we've got which can meet the Japs at low altitudes and knock the Zeros out of the air. The fact that the production line stopped some time ago doesn't mean the end of the P-40—it's still in there doing a bang-up job.

Price Worries: The threat of high production costs, bringing corresponding retail prices, still has manufacturers of private planes worried. They want to keep the two-place planes below $2,000 and the four-place family planes below $5,000, but how to do it prior to really mass production poses a major problem.

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London, England—J. Forecast, Edwin Greenwood, Ltd., Thanet House, Strand, London, W. C. 2, England.

American Aviation is published the 1st and 15th of each month by American Aviation Associates, Inc., American Building, 1317 F Street, N. W., Washington 4, D. C. Printed at the Telegraph Press, Harrisburg, Pa. Subscription rates for United States, Mexico, Central and South American countries—$4.00 for 1 year; $7.00 for 2 years. Canada—$4.50 for 1 year; $8.00 for 2 years. All other countries—$5.50 for 1 year; $10.00 for 2 years. Entered as Second Class matter in Washington, D. C. and Harrisburg, Pa.

OTHER AMERICAN AVIATION PUBLICATIONS:

American Aviation Daily: Published six days each week except holidays; dispatched by air mail. $15 per month; $85 for six months; $170 per year. Group company rates on request. Service Bureau available to all subscribers. Clifford Guest, *Managing Editor.*

International Aviation: Published on Friday of each week; dispatched by first class mail. Editorial representatives in foreign capitals. $100 per year. Service Bureau available to all subscribers. Eric Bramley, *Managing Editor.*

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Publishing Corporation: American Aviation Associates, Inc., Wayne W. Parrish, President; Col. Albert H. Stackpole, Vice President (in active military service); Eric Bramley, Vice President; Brig. Gen. E. J. Stackpole, Jr., Treasurer (in active military service); Thomas E. Lindsey, Sec'y.

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(Continued from page 1)

interest. The issues should have full airing. The U. S. is not too well prepared to face the complexities of dealing with an intrigue-ridden world, but the industry has the know-how, and the over-all objectives, to make good. And it is more clear now than ever before that when war ends, international air transport moves into a new era built upon the achievements of the war.

The burden of calm and reasoned leadership falls upon Senator Josiah W. Bailey, the sage Democrat of North Carolina. We hope he gives international air policy his full attention when the time comes. We hope, too, that he will keep the open mind which he says he has until all sides have been heard entirely in the open.

A Revised Opinion

IN THE extensive editorial published last October 1 expressing this editor's views on a foreign air policy for the United States, there were several points upon which considerable discussion has subsequently taken place and we are now prepared to make certain revisions in our position.

One is the question of one-plane service from inland cities to foreign points across the oceans. We took the position that since certain special safety and other equipment would be needed on trans-ocean flights, and because customs and other government inspection would have to be performed at coastal points anyway, that direct one-plane service from inland cities was not practicable for the early stages of international air transport.

We are willing to concede that this was stretching the point. Certainly direct one-plane service point-to-point is the desirable goal of air transport, and certainly such service from inland cities such as Chicago to such points as London and Paris is practicable. We still believe, however, that in point of actual practice the majority of trans-ocean passengers will embark at coastal points and the direct service from inland cities may be more for sales appeal (most desirable) than for actual economical operations. But we agree that it is not necessary to penalize inland cities that can justify direct one-plane service.

The other point concerned the international operations by domestic carriers under their present corporate existences. We suggested that domestic carriers should organize, control, or participate in separate companies in order not to dilute their domestic services. Our reasoning was simply that domestic service should not be sacrificed in the rush to develop international services, and that it might be difficult to determine an adequate and fair mail pay for domestic services when the company was also operating more costly international services. While we still fail to find a common denominator between domestic and international operations, we will concede that the establishment of an international division within the domestic corporate structure would probably accomplish the same separation purpose we had in mind originally.

Especially considering the swiftly-moving world events in the past few months, and the international conference at Chicago, it would seem that the operation internationally by U. S. domestic airlines under their domestic names might well be to the advantage of this country.

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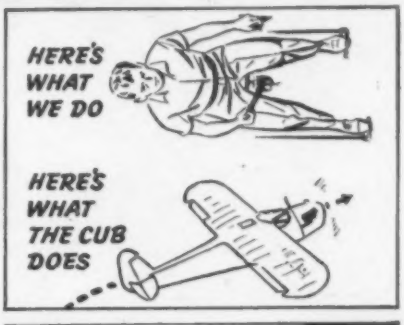

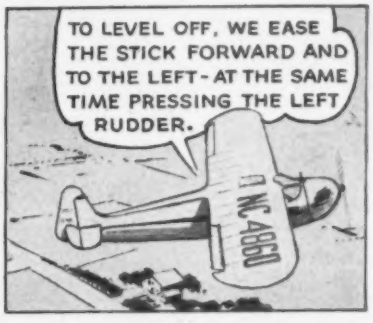

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4. How carefully is the Piper Cub built?
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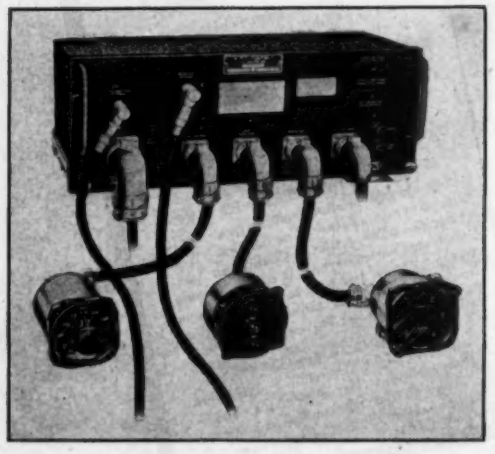

Two years before Pearl Harbor, RCA research engineers began the development of a new kind of radio altimeter—an altimeter which was destined to become of major importance in the successful operation of U. S. Naval aircraft against the Japanese fleet.

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Since that time ALL of the Radio altimeters used in Army, Navy and British aircraft have been designed and first produced by RCA. Thus, five years of continuous altimeter research have built, at RCA, an outstanding reserve of engineering experience in this new field.

Other dramatic stories of RCA aviation radio contributions will soon be told. And, in RCA laboratories, there are still more developments which will help to solve the urgent problems of peacetime commercial aviation.

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Editorial

(Continued from page 6)

Excellent Choice

THE AWARD of the Robert J. Collier Trophy for 1943 to Capt. Luis de Florez, USNR, for his work in perfecting devices for training military airmen, is a fitting tribute to a man who has played quietly and unostentatiously a genuinely important role in aviation for many years. As director of special devices in the Navy's Bureau of Aeronautics, he has been able to save lives and much time and money in training. His prewar career in private life was equally distinguished. At a time when so many great aeronautical developments are in the making, the award committee is to be commended for singling out a truly great achievement that has not been glamorized by spectacular performance in the headlines.

Make Them Airworthy

DISCUSSIONS are now current between industry and government on the question of assuming that surplus airplanes are airworthy prior to their delivery abroad. Much is at stake in the decision.

It is proposed that a CAA airworthiness certificate be issued on all war surplus aircraft ordered from abroad before the granting of export licenses. This would seem to make good sense and most of the U. S. manufacturers are in accord.

While it is true that the mere fact of airworthiness at the time of export in no way assures the continued maintenance of that airplane once it gets out of the country, the sale of uncertificated aircraft in this country could only lead to dangerous implications and very probably a black eye for our industry. If an airplane cannot be made airworthy by CAA standards, then it should be scrapped.

Many foreign countries have inadequate facilities for determining airworthiness. These countries do not maintain the high standards of airworthiness enjoyed in this country. While the U. S. seller cannot be responsible for the use to which the plane is put by a purchaser abroad, at least the U. S. industry should accept the responsibility of selling it in airworthy condition according to U. S. standards.

To date, the manufacturers have been wary of overhauling and converting military airplanes, largely because it threatens to interfere with war production and, further, most of the conversion or overhaul projects handled to date have been performed at substantial losses. It is perhaps the government's responsibility to step in at this point and make it possible for the manufacturers to convert, repair and overhaul at a reasonable profit in order to make sure that all surplus planes for sale here and abroad are in top condition.

It is a temptation to dispose of surplus airplanes "as is," especially abroad where airworthy regulations are not too rigid. It is easy to pass off the responsibility for accidents and wash-outs to the purchaser, especially abroad. But in the long run such a policy cannot help but injure the long-range outlook for the U. S. industry. The world looks to the U. S. for quality aviation merchandise. Let's keep it this way without any exceptions or compromises.

Dissents of Merit

THE RECENT Civil Aeronautics Board decision granting entrance into New York for Northwest Airlines and PCA, thus creating a fourth transcontinental route and a new New York-Chicago service, was notable for two dissents by the chairman and the vice chairman, L. Welch Pogue and Edward P. Warner respectively.

While we concur in the need for a fourth transcontinental route, and are pleased at the strengthening of PCA, we cannot help but be impressed by the arguments set forth by Pogue and Warner that more thought and study should be given to the expanding air transport system. We have long advocated expansion, but we are beginning to feel that the Board's decisions during the past year do not represent the best thinking that should be given to laying a sound system pattern for the future.

For the first time, now, a board member has brought into the open the subject of mergers. Mr. Pogue deserves commendation for his courage in bringing out publicly his views on consolidations in the public interest. The expansion now being provided by the CAB must be sound economically. We are not sure that the patch-work quilt which the CAB seems to be building up is going to be in the interests of all airlines and the public in years to come. We certainly don't want to see the airlines repeat the history of the railroads.

Again the question arises as to just what the Board is aiming at in its series of decisions. Does it have in mind an all-around comprehensive pattern? Is it progressing toward a planned goal? Is it expanding individual airlines in such a way that the new routes will stand the test of time? These questions are especially pertinent when one finds the chairman and the vice chairman issuing dissents.

Transport Under Fire

REPORTS from Leyte indicate that one of the biggest air transport jobs of the war is being performed by the Air Transport Command serving this advance forward area under constant aerial attacks by the enemy.

Those who consider war-time air transport to be chiefly one of supplying the forward areas usually overlook the fact that the "end of the line" may well be in a hot combat zone. As Naval Air Transport Service did at Saipan before the airfield was out of range of enemy fire, so the ATC is doing under even more difficult conditions at Leyte. Yet the mail that was postmarked three or four days previously is being distributed to the troops and needed supplies are reaching their destination on schedule. It is probable that the Leyte ATC operation is the outstanding accomplishment to date of operating a transport service *on schedule* directly into a combat zone harrassed by constant aerial attacks. And not one of the ATC planes had been destroyed at this writing.

WAYNE W. PARRISH.

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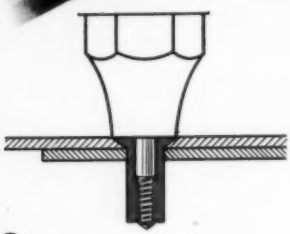
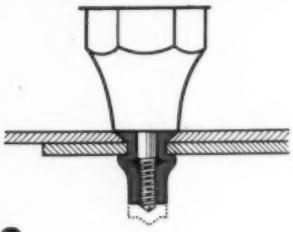
...Here are the ABCs of Rivnut Installation

1 Thread Rivnut onto pull-up stud of heading tool until head of Rivnut touches anvil.



2

Push Rivnut into hole with head firmly against, and at right angles to, the work.



3

A squeeze on the tool lever retracts pull-up stud slightly, causing a lateral bulge upset of the Rivnut.

4

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Aluminum, steel and brass Rivnuts are now being made; also an aluminum Rivnut with splined shank to use in wood. A broad range of standard types and sizes is available. And if some special Rivnuts are needed, B. F. Goodrich engineers will work out designs with you.

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Contains full facts on sizes, types, grip ranges, strengths, weights. Step-by-step illustrations. For your free copy, write now to The B. F. Goodrich Company, Dept. J1, Akron, Ohio.

Scintilla "sparks" the finest

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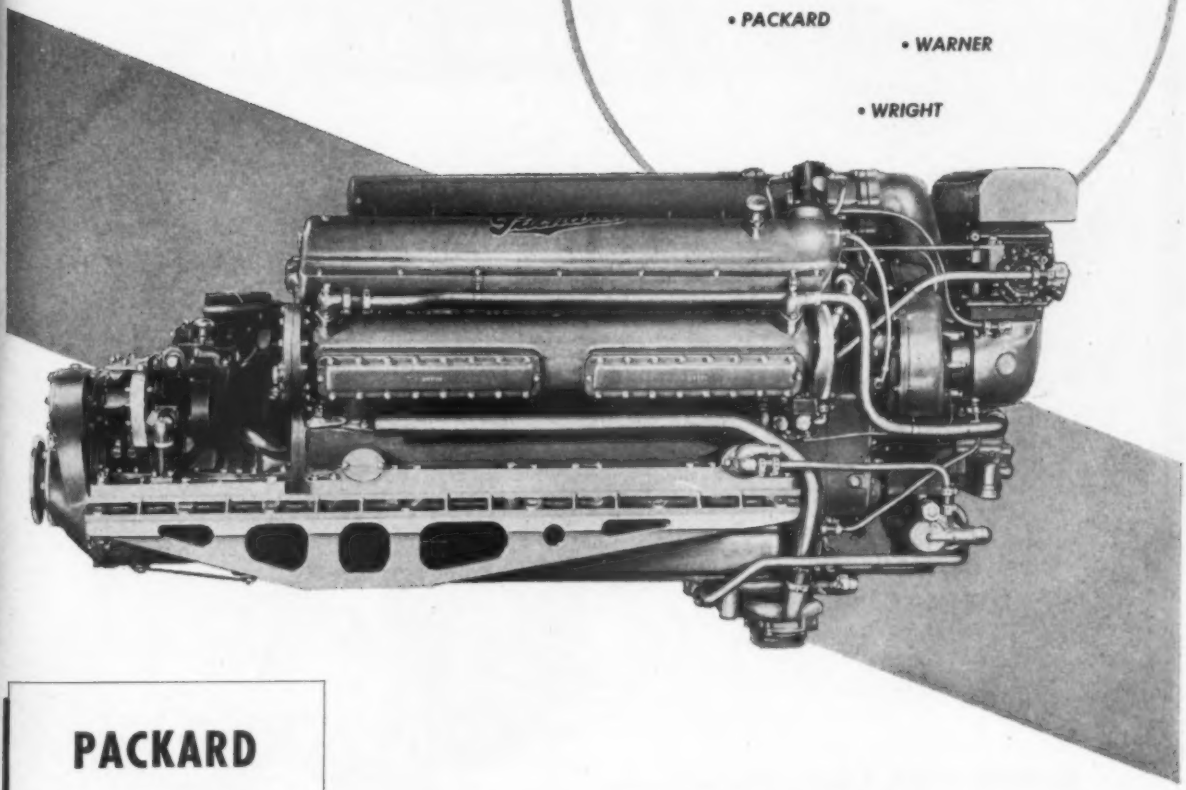
- LYCOMING
- PRATT & WHITNEY
- RANGER
- PACKARD
- WARNER
- WRIGHT



PACKARD
MARINE ENGINE **. . . . PRECISION-BUILT POWER**

Mighty heart of Navy PT boats and Army rescue boats, the Packard Marine Engine relies on Scintilla Ignition equipment to help deliver the vital spark.

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SCINTILLA MAGNETO
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SIDNEY, N. Y.

2.5 HORSEPOWER PER POUND

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VICKERS AIRCRAFT HYDRAULIC MOTOR

PISTON TYPE
CONSTANT
DISPLACEMENT

This Vickers Aircraft Hydraulic Motor weighs only 6.4 pounds yet it has a normal output rating of 16 horsepower at 3000 psi and 3750 rpm.

But a high horsepower/weight ratio is not the only advantage of using Vickers Hydraulic Motors for delivering rotary mechanical motion on many aircraft applications. These hydraulic motors save space as well as weight. Starting and stalled torque both closely approach operating torque. They can be stopped accurately to position. . . . No clutches or brakes are required. They are used for dynamic braking and can be stalled for long periods without damage. These hydraulic motors can be started and stopped instantly due to the very low inertia of the moving parts. They cause no radio interference. Reversal and accurate control of speed are very simply and easily accomplished.

Vickers Aircraft Piston Type Hydraulic Motors are inherently simple and rugged; they are available in a wide variety of models for operating pressures up to 3000 psi.

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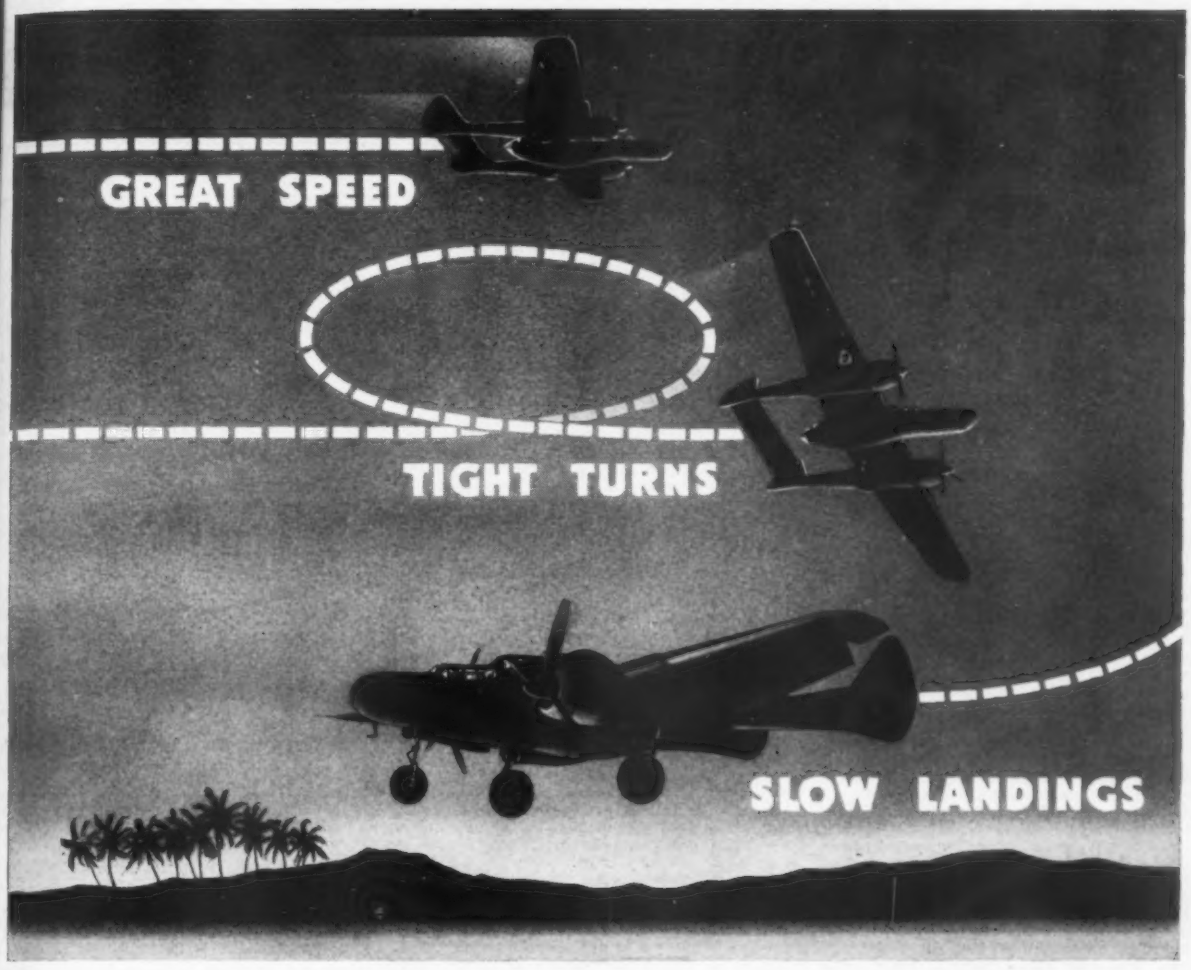
Engineers and Builders of Oil Hydraulic Equipment Since 1921



The big Northrop BLACK WIDOW combines all three—

It couldn't be done with orthodox aileron and flap design. But the Army demanded—and got—this all-around performance in the agile Northrop Black Widow.

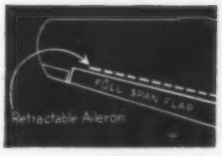
Retractable-ailerons and full-span flaps, designed and built by the Northrop group, are the secret of this first combination of tight-turning ability and slow landing speed in a large, fast airplane. These revolutionary ailerons leave almost the entire trailing edge of the wing free for flaps. So the big Black Widow lands "on a dime"—at no more than 70 to 80 M.P.H.

Vital to a night-fighter, think what such reduced landing speeds promise for peacetime passenger and cargo airplanes . . . extra safety . . . air strips only half as long as formerly believed necessary.

The Black Widow, swift as a fast fighter yet big as a medium bomber has many advancements in aerodynamic design. They typify the Northrop-group thinking and building skill that aviation will continue to need in the years ahead.

Northrop Aircraft, Inc., Northrop Field, Hawthorne Calif. Member Aircraft War Production Council, Inc.

CONVENTIONAL DESIGN: *Tight turns* demand "plenty of aileron," *slow landings* call for large flaps. With both controls sharing the trailing edge of the wing, designers were forced to compromise on performance.



RETRACTABLE-AILERONS *in* the wing, the first in aircraft history, were created for the P-61 by the Northrop group, making possible a more efficient aileron that teams up with the world's first full-span flap.

NORTHROP *Creators of the* ***Flying Wing*** *and the* ***Black Widow*** *P-61 Night Fighter*

Books

CIVIL AVIATION AND PEACE. By J. Parker Van Zandt. The Brookings Institution, Washington 6, D. C. 156 pp. $1.00.

This is Volume II of a series by Mr. Van Zandt under the general title, "America Faces the Air Age". In every respect it lives up to the high standard of the first volume, "The Geography of World Air Transport". Judging the series from the quality of the first two volumes, the author is making a very important contribution to this country's literature on the air age.

As in the first volume the author is highly selective and careful in the use of words. The book is concise, poignant, provocative, and easy to read. The main text is only 98 pages in length, yet it is packed with meaty sentences and comprehensive treatment. The new volume was issued just as the International Aviation Conference was getting under way in Chicago—timely contribution that undoubtedly influenced the thinking of some of the delegates.

It is Mr. Van Zandt's earnest conviction that civil aviation cannot be controlled or limited, that all previous efforts to limit the development of aviation have failed, and that the freest use of the airplane in commercial transportation is the only sensible goal that the world should set for itself.

Particularly effective are his arguments against the British "quota" proposal for international air carriers. He asks why the British have not suggested similar controls and limitations in the fields of telecommunications and shipping where in the past they have been more favorably situated. His arguments against the "shopworn slogan", that trade follows the flag, are also effective. Switzerland and Czechoslovakia developed substantial foreign trade without any shipping, whereas Norway, with the fourth largest prewar merchant fleet, had little foreign trade of its own.

The author presents some illuminating statistics of types not heretofore emphasized in other books, to show how the preponderance of world civil aviation has been in the United States, and how small strictly international air transport is in terms of traffic. The major field is, and will be, he holds, the domestic traffic. "If operations are to be parcelled out between nations according to some quota system for alleged security reasons, it hardly seems sensible to allocate international services and ignore the much larger domestic field", he writes.

Mr. Van Zandt evidently anticipated when he wrote the book that much stronger arguments would be given for quotas and controls because of national security. At the Chicago conference national security was virtually ignored—unexpectedly so—while the basic arguments boiled down to one of economics. It may be assumed that the transport airplane is not nearly as feared from the standpoint of security today as it was before the war.

The author's plea for freedom for world air transport is supported by convincing illustrations of how the American tourist dollar can aid greatly in providing dollar exchange to other nations and thereby help U. S. industry. He also is very optimistic in terms of traffic potentials by air with a three-cent-a-mile passenger rate. We are inclined to agree with him wholeheartedly. His chapter on "Mass Air Travel" is a tonic to those who believe that volume air travel is coming.

Perhaps too much emphasis is placed, however, on the relatively smaller proportion of air travel that is international. It must be remembered that the airplane has become popular and preferred where it saves time and provides more comfort than surface transportation. Naturally domestic transportation received first attention by airline companies. Not until the past two years has the airplane been in a position to match surface travel over-water. In the postwar world, international air travel should bulk *relatively* higher than it did before the war—in fact the long-range outlook is virtually unlimited.

In any event, Mr. Van Zandt is to be commended most highly for this second volume. Like the first, it is "must" reading for those engaged in, or thinking about, air transportation.

W. W. P.

THE COMING AIR AGE. By Reginald M. Cleveland and Leslie E. Neville. Whittlesey House. 358 pp. $2.75.

This book intends to blueprint tomorrow's aviation world and embraces all fields of aviation from air-age geography and airlines to aircraft, airports and private flying. It is comprehensive in scope and its authors have had long backgrounds in aviation.

From a critical viewpoint, the book is very wordy, not too selective in its material, and could be better written. In view of the stature of the authors, the book is regrettably too much a rewrite of clippings from a newspaper morgue. Material is thrown in without placing it in proper perspective in a way that will provide clarity and analysis for the reader.

On the other hand it must be admitted that blueprinting tomorrow's aviation world is a vast undertaking, so widespread is today's aviation development. It is not easy to write a book of this scope and please everyone. But the book could have been improved if the approach had been from within aviation, instead of the "outside looking in" approach that seems to have been used. In other words, the book lacks editing, appraisal, and careful analysis; broad statements are made, and quotations are used, without interpretation and weighing of words. But the book does contain a great mass of material, most of it useful and pertinent, and the above critique is not intended to mean the book does not serve a useful purpose for the layman.

W. W. P.

Letters

Summing Up

Burbank, Calif.

To the Editor:

My interpretation of "the complicated British proposal" described in Eric Bramley's second big article on the Chicago conference (see pp. 19-20 of your December 1 issue) can be summarized in one sentence, which is submitted herewith: *A U. S. carrier (for example) would be allowed to sell exactly as many local London-Paris seats as New York-Paris seats—but no more.*

Perhaps this summing-up will make it a little easier to grasp the simplicity of the basic British proposal—although a numerical example, as given in the article, should be "required reading" for all bystanders and is, of necessity, a rather complicated matter.

As soon as the conference delegates have heard of my interpretation, their problems will all be solved and they can go home.

JOHN M. HENDRICK

(Our statisticians aren't sure that the British proposal works out quite that simply. Reader Hendrick should be glad to know that neither the complicated British proposal nor the almost equally complicated American plan is contained in any of the final conference documents. Thus, slide rules can be discarded, at least temporarily—Ed. Note).

Wings of Yesterday

Twenty-five Years Ago

The British Air Ministry announced the opening of an air route from Capetown to Cairo. (Jan. 1, 1920)

Commander Albert C. Read completed recruiting flight for Naval Aviation 7,740 nautical miles in a 3½ month cruise. The NC-4 plane visited 43 cities made 50 landings, and was in the air 1 hours. (Jan. 2, 1920)

James H. Knight flew airplane mail from Cleveland to Bellefonte, Pa., 215 miles in 83 minutes, at an average speed of 156 mph. (Jan. 2, 1920)

M. Sadi Lecointe, in a Nieuport machine, was reported to have covered 1 kilometers in 42 minutes, 53 4/5 seconds an average speed of 166 mph. (Jan. 1920)

Fifteen Years Ago

In the Guggenheim Safe Aircraft Competition, the Curtiss "Tanager" received the $100,000 prize. (Jan. 6, 1930)

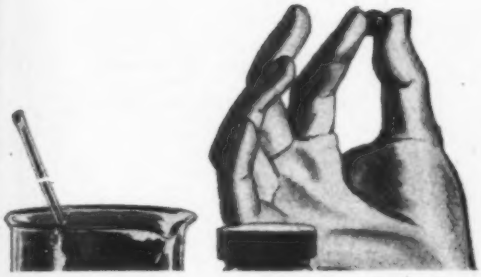
Aviation became a billion dollar industry during 1929. Two things characterized the development—one, an amazing influx of capital; two, the rapid extension of commercial service. Estimates showed that 6,500 aircraft were constructed and that 100,000,000 miles were flown in the United States during the year. (Jan. 1, 1930)

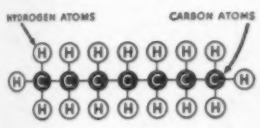
A Gypsy Moth airplane, used in scouting for whales and flown by Leif Lier, was lost from the Whaler KOSMOS. Missing with Lier was his passenger Dr. Ingvald Schreiner, ship's doctor. Admiral Richard Byrd rendered every possible assistance in the extensive search for the lost plane. (Jan. 1, 1930)

The Aeronautics Branch of the Department of Commerce was investigating an accident at Santa Monica, in which two planes crashed head-on with the loss of 10 lives. The accident occurred during the filming of a picture based on the disappearance of Capt. Alfred Lowenstein, Belgian financier, from a plane crossing the English Channel. (Jan. 3, 1930)

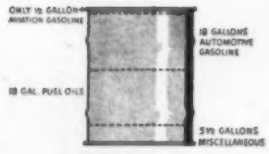
Railway Express Agency announced that air express service has been inaugurated between Pittsburgh and Washington. (Jan. 1, 1930)

These pills help cure the high-octane headache





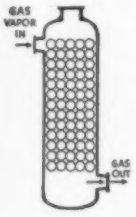
This is a molecule of ordinary gasoline. Like any gasoline it will burn, but this arrangement of atoms causes severe detonation in high-compression aircraft engines.



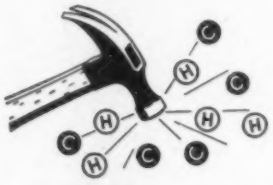
Old-fashioned refining produced some gasoline that *was* good enough for aircraft engines—but only a little, and it wasn't good enough for today's planes.

The more plentiful ordinary gasoline *can* be turned into high-octane aviation fuel if its hydrogen and carbon atoms are rearranged to form a different kind of molecule.

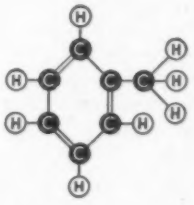
The new catalyst developed by Standard of California does the trick. A catalyst *causes* a change in gasoline but does not actually enter into the new product.



Here is how it is used: Ordinary gasoline, vaporized, goes into a chamber filled with millions of these little catalyst pills. When the vapor touches the catalyst—



its molecules are split open and the atoms arranged in a new pattern. Our scientists devoted years of research to finding the catalyst that would accomplish this best.



This is how the molecule looks after it has been reformed by the catalyst. Standard scientists have made it non-detonating. It is now safe for aircraft engines.

Now, when every pint of aviation fuel is precious, we're making thousands of additional barrels—thanks to another triumph of Standard aviation research.

STANDARD OF CALIFORNIA

"The airplane has shriveled and shrunk distance... It quickens understanding among peoples and stimulates trade among them... It will bring the nations of the Americas closer together as its uses are more fully developed."

ERIC A. JOHNSTON
President United States Chamber of Commerce.

Here IS THE CHALLENGE

... a postwar national income which will assure the dignity of productive jobs for all!

Experts have estimated that to maintain our economy and assure full employment our nation must continue an annual national income of at least 150 billion dollars. To accomplish this the U. S. must successfully develop the full potential of its domestic and international commerce. Trade must be implemented by effective transportation.

To assist in the stimulation of commerce, Braniff Airways, Inc., and Aerovias Braniff, S. A. propose a coordinated plan of air service for the Americas. The routes planned would help to provide needed transportation among the principal productive areas and their markets in this hemisphere.

BRANIFF AIRWAYS

DISTINGUISHED SERVICE

Everywhere they have performed distinguished service — powered the craft of valiant flyers as they won coveted decorations. ★ They've blasted Germans and Japs, and have served the Russians and British. ★ They've been America's own liquid-cooled aircraft engines since long before Pearl Harbor. ★ Because these engines are streamlined, pilots have better visibility. Because of their dependability, they are always ready to go. Because of their smoothness, there is less pilot fatigue. Because of their economy with fuel, their range is wide. ★ These are engine qualities that will be important to you in the days of far-flung air transport to come.

POWERED BY ALLISON

P-38—Lightning
P-39—Airacobra
P-40—Warhawk
A-36 and P-51—Mustang
P-63—Kingcobra

Allison has already furnished more than 75,000,000 H.P. for use in these planes.

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Allison
DIVISION OF
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GM
GENERAL MOTORS

KEEP AMERICA STRONG
BUY MORE WAR BONDS

Every Sunday Afternoon
GENERAL MOTORS SYMPHONY OF THE AIR—*NBC Network*

Finish the Fight – with War Bonds

All-star Production

Long before the B-29's bombed Japan, the Boeing Superfortress was faced with its first great challenge. This was in the battle of production . . . the problem of establishing one of the greatest manufacturing programs ever attempted.

Producing the Boeing-designed Superfortress in quantity is a colossal example of team-work involving people and plants all over America.

Completed B-29's are turned out by Boeing plants at Wichita, Kans., and Seattle-Renton, Wash., and by the Martin and Bell aircraft companies as well.

Major assemblies are built by Briggs, Cessna, Chrysler's De Soto Division, General Motors' Fisher Body Division, Goodyear Aircraft, Hudson, Murray and A. O. Smith.

The Superfortresses' huge engines are manufactured by Wright Aeronautical and by Chrysler's Dodge Division. Their 16½-foot Hamilton Standard propellers by United Aircraft and Nash Kelvinator.

Literally thousands of sub-contractors and suppliers, from small shops to large factories, supply sub-assemblies, parts and equipment.

To Boeing fell the task of co-ordinating this vast, nation-wide manufacturing organization. Its engineers furnished design and engineering data to the other companies involved, and laid down the tooling plans.

Boeing production specialists blazed new trails in planning, developed new facilities, processes and manufacturing procedures on a scale never before tried. They had to execute the program in terms of other manufacturers, *and in Boeing plants at the same time.* For Boeing's own eventual schedule is approximately 75% of all Superfortress production.

After Japan is defeated, this unique experience, and this same Boeing ingenuity in research, design, engineering and manufacture will be turned to peacetime aircraft. And you can know of any product . . . if it's "Built by Boeing" it's bound to be good.

DESIGNERS OF THE B-29 SUPERFORTRESS • THE FLYING FORTRESS • THE NEW STRATOCRUISER
THE KAYDET TRAINER • THE STRATOLINER • PAN AMERICAN CLIPPERS

BOEING

Vol. 8 No. 15
Jan. 1, 1945

American Aviation

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This Issue

Pattern Set Up for World Transport Body

Airline Operators Are Invited To Havana Meeting April 16

By Eric Bramley

A NEW INTERNATIONAL AIR TRANSPORT organization, replacing the two existing groups of airline operators, has been proposed by an eight-man drafting committee, which is now circulating its proposal among all international and domestic airlines for comment and suggestions.

All airlines eligible either for active or associate membership are being invited to attend a meeting starting Apr. 16, 1945, in Havana, Cuba. At the final meeting of this conference, articles of association are to be adopted, a president and executive committee elected, and the place of the first general meeting chosen.

Gorrell Sends Invitations

On Nov. 10, Col. E. S. Gorrell, president of the Air Transport Association of America, cabled invitations to the International Air Traffic Association and the Conference of International Air Traffic Operators in London, the two existing organizations, to send representatives to Washington to discuss a new world-wide association. Later, the meeting was extended to include representatives of other foreign airlines attending the International Civil Aviation Conference in Chicago.

At a meeting in Chicago Dec. 7, representatives of more than 20 international and domestic airlines voted to appoint a drafting committee to draw up proposed articles of association for a new organization. Members of this committee were Col. Pedro Chapa, of Cia Mexicana; John C. Cooper, Jr., Pan American Airways; Luis Machado, Expreso Aereo Inter-Americano of Cuba; Col. F. Flocon, Transports Aeriens Francais; Dr. H. F. Gorecki, Polish Airlines (LOT); J. R. McCrindle, British Overseas Airways; Per Norlin, Swedish Airlines (ABA), and John Slater, American Export Airlines.

The drafting committee suggested that the new organization be called either International Air Transport Association (IATA) or Association of International Airline Operators (AIAO). Although asserting that the location of the head office should be decided at the first general meeting, the committee said it was "impressed by the desirability of having the head office . . . in the same city as that in which the International Civil Aviation Organization is situated." (Headquarters of the Provisional International Civil Aviation Organization are to be in Canada).

"It is recommended," said the committee in a memorandum accompanying the articles, "that the proposed Association should replace the present Associations, known as IATA and CIATO; that there should hereafter be only one general international air transport association, and that those desirous of joining the new association should be required to resign their membership (if any) in the above named associations."

24 Nations Represented

(IATA was founded in 1919, and in 1939, 20 years later, claimed to have 29 airline members representing 24 countries. CIATO was founded last year in England).

Aims and objectives of the new organization shall be:

"(1) To promote safe, regular and economical air transport for the benefit of the peoples of the world, to foster air commerce, and to study the problems connected therewith;

"(2) To provide means for collaboration among the air transport enterprises engaged directly or indirectly in international air transport service, and

"(3) To cooperate with the International Civil Aviation Organization and other international organizations."

Arguments on Eligibility

Authoritative sources reveal that there were prolonged arguments within the drafting committee on the question of who should be eligible for membership in the new organization. British interests, it is said, argued against inclusion of purely domestic airlines, either as active or inactive members. U. S. interests, on the other hand, urged that domestic lines must be given an opportunity to attend meetings and "speak their piece," because actions of the international group might affect some of their procedures.

The drafting committee finally laid down the following membership requirements:

Eligible for active membership is any air transport enterprise operating a scheduled air service in the transport of passengers, mail or cargo between the territories of two or more states, under the flag of a state eligible to membership in the International Civil Aviation Organization as established in Chicago. Each active member shall have one vote.

Associate members will include any other air transport enterprises "operating under the flag of a state eligible to membership in the International Civil Aviation Organization." Associate members will not be entitled to vote.

Dues of active members are to be fixed annually by the general meeting upon recommendation of the Executive Committee "based upon the gross licensed ton-

World Operators Draw Up Association—The drafting committee of international air transport operators met at the Carlton Hotel in Washington to draw up the form of a new world-wide organization of airline operators. Attending, left to right, were: Col. Edgar S. Gorrell, advisor, president, Air Transport Association of America, Washington; F. W. Farey-Jones, advisor, CIATO, London; John Slater, American Export Airlines, New York; R. Briend, advisor, Transports Aeriens Francais, French Air Mission, Washington; Luis Machado, Expreso Aereo Inter- Americano, Havana; H. J. Gorecki, Polish Airlines "LOT," Polish Embassy, London; J. R. McCrindle, British Overseas Airways Corp., London; John C. Cooper, chairman, Pan American World Airways, New York; Col. F. Flocon, Transports Aeriens Francais, Paris; Per A. Norlin, Swedish Airlines, Stockholm; and Maj. Henri Lesieur, advisor, French Air Mission, Washington.

United to Build Airport Terminals

United Air Lines has decided upon a policy of building its own terminals rather than expect construction of these facilities by federal, state or municipal governments, W. A. Patterson, president, declared during the fortnight.

Speaking before the Adcraft Club in Detroit, Patterson said that if a federal, state or municipal agency has provided the airport land, surface of runways, and navigation facilities, it has fulfilled its obligation to airline transportation, and the airline should build the terminal, shops and hangars.

Construction of terminals along United's system would cost an estimated 12 million dollars, according to Patterson.

There was a time when the cost of terminals being borne by some branch of the government was necessary to the development of the infant airline industry, but the air transport industry has grown up, Patterson pointed out.

"If we are to be recognized as an honest to goodness business, we must assume these obligations," Patterson continued. "It is evidence of our good faith." Patterson warned that as long as airlines depend upon government funds to finance terminals they are vulnerable to criticism from surface carriers.

United is prepared to proceed with building terminal facilities in the smaller cities without question, Patterson said, but in some large cities where the cities prefer to construct the terminals the line will, of course, co-operate with local wishes.

Under United's plan each airline would build its own hangars and in cities where several lines operate, the various lines would jointly finance construction of the station building.

nage of each member's fleet operated in commercial international air transport by such member on July first of the preceding calendar year. For the purpose of fixing such dues, the active members shall be annually divided into five categories on such tonnage basis. The dues for each member in any particular category shall be the same."

Dues of associate members, and entrance fees, are to be determined by the general meeting. A general meeting is to be held annually. A majority of active members shall constitute a quorum at such a meeting, and a two-thirds vote of the quorum is necessary for any action.

"The Association at any general meeting, or at a special meeting for that purpose, may organize such member traffic and rate conferences as may be required or permitted under applicable laws and regulations; and may establish branches of the head office in various parts of the world, and set up regional groups of members to deal with local problems and coordinate the same with the general functions of the Association."

The president of the association is to be selected from among the active members. His position is honorary.

The Executive Committee is to be vested with the general management and control of the affairs, funds and property of the association. It shall be composed, in addition to the president, of not less than nine or more than 12 persons chosen from among the active members. At the original election of the committee, approximately one-third of the members thereof shall be elected for one year, approximately one-third for two years, and approximately one-third for three years. Thereafter, one-third of the membership shall be open for election annually and, following the original election, each member shall be elected for three years. Four members of the committee constitute a quorum, but decisions are valid only if approved by a majority of all committee members.

The Executive Committee shall choose from among its members one or more vice presidents, may appoint subcommittees, and may adopt its own rules and regulations.

"In considering the eligibility of 'active members', either for original membership in the Association or for subsequent electing, the drafting committee understands, and so recommends . . . that any air transport enterprise whose operations are now suspended due to war activity shall be considered for the purpose of admission as if they were operating in their pre-war status," said the accompanying memorandum.

The committee also recommended that "some form of decentralization will be necessary in order to deal with local matters affecting international operations between, for example, Egypt, Iraq and Iran; or between Burma, Thailand and the Malay States, or between the Latin American countries.

"Such branch offices would be established at convenient centers throughout the world with a branch secretary in charge who would be a member of the secretariat of the central office.

"Enterprises operating services within or through the region served by a branch office would be at liberty to request the secretary . . . to call a meeting of the operators concerned to discuss local matters of common interest. Should more than one region be concerned, the branch secretary would refer the matter to the central office.

"Meetings could be arranged by the branch secretary between local internal operators and the international companies operating within or through the region. Those meetings would insure the necessary liaison and collaboration between the feeder lines and the trunk line operators.

"The branch office would also act as a collecting and distributing center of information on matters of common interest to members of the association within the region."

The drafting committee emphasized that its articles of association were tentative and proposed, and that changes may be made before the Havana meeting as the result of suggestions which may be received.

Private Flying Allowed In Guatemalan Republic First Time in History

For the first time in the history of the Republic of Guatemala, the Government has voted to allow private flying within the country.

Early in December, six weeks following the overthrow of the previous regime, exclusive permission was granted to the Civil Aviation Group of the Club Interamericano de Universitarios, Guatemala City, to develop private flying.

The club, located at 10a Avenida Sur No. 18, is a non-profit social organization composed of leading Guatemalan citizens and residents there from the United States who are desirous of learning to fly for personal use.

Ground classes were started in December and the club expects to obtain a few lightplanes by next spring.

Thomas J. Keane, formerly of Middletown, Pa., is one of those from the U. S. associated with the club.

Aviation Calendar

Jan. 2—Inter-city meeting, Miami, to discuss Miami's role in international air transport.

Jan. 5—National Aircraft Standards Committee, Western Division meeting, Hollywood Knickerbocker Hotel, Hollywood.

Jan. 5-6—Industry Flight Testing Technique, ACCA, CAA-Industry, Knickerbocker Hotel, Los Angeles.

Jan. 8-9—NASC, Executive Board meeting, Hollywood Knickerbocker Hotel, Hollywood.

Jan. 8-12—Society of Automotive Engineers, War Engineering-annual meeting, Book-Cadillac Hotel, Detroit.

Jan. 15-17—NASC, Electric Circuit Breaker meeting, Stevens Hotel, Chicago.

Jan. 16-17—NASC, SAE, Hydraulics meeting, Stevens Hotel, Chicago.

Jan. 17-18—ACCA, Engine Technical Committee meeting, Hotel Lexington, New York.

Jan. 18-19—MASC, SAE and Government, joint meeting, Circuit Breaker, Stevens Hotel, Chicago.

Jan. 24-26—Annual meeting, American Meteorological Society, Kansas City.

Jan. 30-31—Annual meeting, National Aeronautic Association, Denver.

Jan. 30-Feb. 1—Institute of the Aeronautical Sciences, 13th annual meeting, New York.

Feb. 2-3—ACCA, ARC, ATA, Air Carrier Performance Subcommittee meeting, Hotel Lexington, New York.

Feb. 5-6—ACCA, ARC, CAA, CAB Air Carrier Performance, Statler Hotel, Washington.

Apr. 4-6—SAE, National Aeronautic meeting, Hotel New Yorker, New York.

Apr. 10-11—Aeronautical Chamber of Commerce, Airplane Technical Committee meeting, New Orleans.

Apr. 13-14—ACCA, National Airworthiness Requirements Committee, New Orleans.

Apr. 16—International Air Transport Organization Meeting, Havana.

May 6-9—International Aviation Fraternity, first annual convention, Miami Beach.

May 20-27—Pan-American Aircraft Exposition, Dallas.

NATS Doing Commendable Transport Job

Pacific Wing Operates 27,000 Miles Of Routes; Perfect Safety Record

By WAYNE W. PARRISH

NATS—PACIFIC is a great show.

I like it because it is well managed, smoothly operated, has exceptionally high morale, and is doing a vital war job. I like it because there is no excess use of men or officers, because most of its accomplishments have been performed without benefit of publicity or fanfare, and because it is trying to use the most advanced airline procedures and techniques. I like it because the bulk of personnel is made up of just plain ordinary guys from down the street who are doing their level best to run a military airline safely and efficiently.

NATS-Pacific, or NATSPAC to be precise, is the Pacific Wing of the wide-flung Naval Air Transport Service. The mission of NATS is very simple but very important—it supplies the Navy's big fleet by air. The Pacific Wing is only about a third of the total NATS operations, but it should be rather obvious that the importance of the job in the Pacific is second to none.

On my 27,000-mile Pacific tour as a war correspondent I flew on every transport service out there—NATS, ATC, SCAT, TAG, DAT and other assorted services. But I flew more on NATS than on all other services combined. ATC is considerably bigger in volume, plane fleet and personnel, but NATS was my host.

NATSPAC is one of the greatest air transport jobs of all time. It probably is delivering more plane miles and ton miles per unit of personnel than any other sizeable system in the war. It has developed a network of 27,000 route miles (at last count) within two years and, most important, it has maintained a 100% safety record. Considering the pioneering, the vast extent of the Pacific and the isolated landing spots, and war-time conditions including operations sometimes into hot combat zones, the safety record is a truly remarkable achievement.

3 Million in October

In October NATSPAC flew over 3,000,000 scheduled miles. Month by month this total has been increasing. In October NATSPAC had about 100 airplanes, all but two of them four-engined, and the fleet is being increased week by week.

NATSPAC has gone through quite an evolution since Pearl Harbor. When the disaster came on that fateful December 7, there was no NATS. It was soon to be organized, but the Navy had to depend very heavily on the only air transport service in the Pacific, Pan American Airways. All during 1942 PAA carried the Navy's load. By 1943 NATS had begun to get its own organization in operation and by January, 1944, was assuming about 50% of the operations in the Pacific. During 1944 the percentage of operations by PAA as a contract carrier has steadily decreased. Its probably now about 20%, and the regular NATS organization is doing all of the operating beyond Honolulu.

Part of General Evolution

The switchover from contract carrier to NATS has been only one part of a general evolution, however. NATS began on the assumption that it would use only flying boats in the Pacific. But today the flying boat is playing a smaller and smaller role while the four-engined Douglas transport, the R5D (C-54 in the Army) is doing the main job on the trunk routes. In fact the NATSPAC fleet of flying boats consists of 32 Convair PB2Y3 Coronados, one Martin Mars, and the four Boeing 314's which actually belong to PAA for civilian operations between San Francisco and Honolulu. Outside of a few twin engined R4D's, the remainder of the fleet consists of R5D's. In October NATS retired all twin-engined Martin PBM Mariner flying boats.

The R5D's are powered with Pratt & Whitney R-2000 engines with Hamilton Standard three-bladed propellers. The R5D-1 model, similar to the Army's C-54A, is grossed at 65,000 lbs., and the newer R5D-2 model (C-54B) is grossed at 68,500 lbs. On the longest single hop, from San Francisco to Honolulu, about 2400 statute miles, the R5D has a payload of about 9200 lbs., while on the westbound trip the payload is about 7800 lbs.

Comparing NATS-Pacific With U. S. Airlines

The following comparative statistics for the first six months of 1944, ending June 30, are interesting in that they show how the Pacific Wing of NATS stacks up with the total 19 airlines and with the domestic leaders. It should be noted that the NATS figures are for the Pacific Wing only and reflect only about one-third of total NATS route operations in the world. As an accompanying table shows, NATS is expanding rapidly and may well surpass domestic airlines before it reaches its full strength.

Plane Miles Flown	
19 U. S. Airlines (rev. miles)	61,091,150
NATS-Pacific	10,238,091
Passenger Miles Flown	
19 U. S. Airlines (rev. miles)	937,347,772
American Airlines	239,125,570
United Air Lines	201,748,365
TWA	141,117,391
Eastern Air Lines	114,778,377
NATS-Pacific	103,928,053
Mail, Freight Ton Miles	
19 U. S. Airlines	29,866,724
NATS-Pacific	22,448,914
United Air Lines	9,524,233
American Airlines	7,228,919

The Coronados, which have gone through the Rohr Aircraft conversion, are each powered with four Pratt & Whitney 1830-92 engines, the same type that is used on the commercial Douglas DC-3. Curtiss 4-bladed propellers are used on the inboard engines, and 3-bladed propellers on the outboard engines. The Coronado grosses 68,000 lbs. on take-off at San Francisco, and 65,000 lbs. elsewhere in the Pacific. Payload on the San Francisco-Honolulu run is 7,000 lbs. westbound and 3289 eastbound.

Mars Lost in Shuffle

The Mars flying boat, largest in the world, is the most publicized feature of NATSPAC in the United States, and it does carry a whale of a payload—25,000 lbs. westbound and 19,129 eastbound. In a sense the Mars is the pride of the NATS fleet, but in flying around the Pacific it is lost in the shuffle because it operates west only to Honolulu—and that's just a bare starting point for a Pacific tour. The real NATS show is thousands of miles west of there.

NATS also has twin-engined Douglas

NATS-PACIFIC TRAFFIC STATISTICS

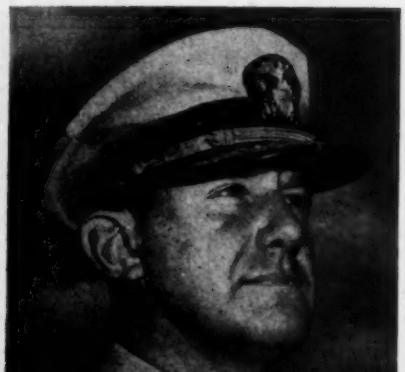
1943

	July	August	Sept.	October	Nov.	Dec.	Totals
Scheduled Plane Miles Flown	597,617	748,611	832,091	810,600	910,554	1,131,355	5,030,828
Passenger Miles Flown	4,202,305	5,286,066	6,086,497	6,791,200	7,323,678	9,277,757	38,967,503
Mail & Freight Ton Miles Flown	1,131,150	1,445,701	1,629,188	1,498,577	1,651,147	2,414,026	9,769,789

1944

	January	February	March	April	May	June	July	August	Totals
Scheduled Plane Miles Flown	1,370,610	1,266,711	1,516,526	1,752,075	2,094,674	2,238,095	2,528,631	2,593,117	15,360,439
Passenger Miles Flown	11,593,463	10,869,417	15,645,958	19,539,133	22,441,150	23,838,932	28,479,490	28,982,043	161,389,586
Mail & Freight Ton Miles Flown	2,967,612	2,913,766	3,157,776	3,526,176	4,538,403	5,345,181	6,141,702	6,459,332	35,049,948

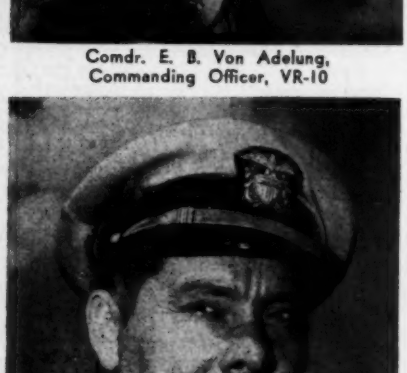
Important Cogs in NATS-Pacific Organization



Comdr. E. B. Von Adelung,
Commanding Officer, VR-10

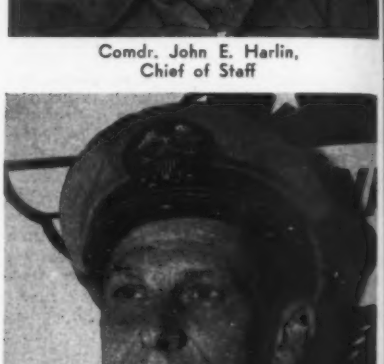
Capt. D. W. Tomlinson, USNR,
Commanding Officer, Pacific Wing, NATS

Comdr. John E. Harlin,
Chief of Staff



Lt. Comdr. M. L. Hoblit,
Commanding Officer, VR-12

Lt. Comdr. W. F. Peterson,
Commanding Officer, VR-11



Lt. Comdr. Charles H. Dolson,
Operations Officer COMNATSPAC

L. to R.—Richwine, Fallon, and Proctor

Lt. Comdr. D. W. Richwine (in photo at left) is Chief Staff Officer in charge of seaplane operations, COMNATSPAC. Lt. Comdr. W. E. Fallon is Operations Officer, VR-12, and Lt. Comdr. R. H. Proctor is Operations Officer, VR-2. In group of photos at right, Lt. Comdr. S. Paul Johnston is technical aide to the Commanding Officer, VR-10; Lt. Comdr. J. A. McFadden is in the operations office of VR-11; Lt. J. B. Hulburd is chief staff officer in charge of landplane operations, COMNATSPAC; and Lt. Comdr. Jean Mauze is Administrative Assistant, COMNATSPAC.

Johnston

McFadden

Hulburd

Mauze

R4Ds, each powered with 1830-92 Pratt & Whitney engines.

So much for the plane fleet.

Ground facilities vary from excellent to rugged. As one might expect, NATS has every possible ground facility at Alameda (San Francisco) and at Honolulu. From there on out it takes what it can get in the way of barracks, tents, Quonset huts and what have you. Sometimes it furnishes its own ground facilities, sometimes the island command furnishes them. But wherever you go, a handful of NATS personnel is holding down big jobs. The Army's ATC outnumbers NATS at least 10 to 1 in most places west of Honolulu. Sometimes this is because ATC does more of its own work—such as providing mess—and sometimes its just because the Army is different from the Navy and wants three or more men for every job. On the other hand, NATS has often been pinched for personnel.

To understand the NATSPAC set-up, you must first understand that it is composed of seven distinct units as follows:

The Staff (Honolulu)
Air Transport Squadrons 2, 10, 11, 12, 13
PAA Pacific Division (under contract)

NATSPAC has no operations within the United States. Other NATS squadrons feed into it at Alameda, but NATSPAC begins at Alameda and functions west of there.

Of the five squadrons listed above, VR-12 is the headquarters administration of all NATS units and flight control. Its headquarters are at Honolulu, adjacent to the offices of COMNATSPAC, the command staff of the Pacific Wing.

VR-10 is the maintenance squadron for the Pacific Wing.

VR-2 is a squadron operating four-engined flying boats between the mainland and points far out in the Pacific.

VR-11 is a squadron flying R5D landplanes from the mainland to far Pacific points.

VR-13 squadron operates twin-engined Douglas R4D landplanes in the Southwest Pacific.

Pan American Airways operates as a contract unit, now between San Francisco and Honolulu.

Thus out of the six NATSPAC squadrons, three are operating squadrons, one is maintenance, one is PAA as a contract carrier, and one is headquarters administration. Topping it all is the command staff.

There are quite a few well-known airline men in NATSPAC, especially the group of TWA officers who comprised the Naval Reserve Squadron at Kansas City for many years prior to the war. But for every trained airline man there are many men from general industrial or professional life who went on active duty in the Navy to do their part in the war.

Captain D. W. Tomlinson, USNR, former vice president in charge of engineering of TWA, and world renowned for his high-altitude and other areonautical work, is commanding officer of NATSPAC. His chief staff officer is Comdr. John E. Harlin, USNR, former top pilot of TWA who has made a very important contribution to the smooth-running NATS organization.

Others in the "front office" are Lt. Comdr. Jean Mauze, on leave from the United States Trust Company of New York; Lt. (jg) Eli Leflar, an attorney from Arkansas, and Lt. H. O. Werner, a former college teacher of English.

Operations director for the Pacific staff is blond, able Lt. Comdr. Charles H. Dolson, former chief pilot for Delta Air Lines. Under him are the following, some of whom have come from the airlines or the manufacturing industry:

Lt. Comdr. A. A. Gray, communications chief, formerly with Pan American Airways' Pacific Division; Lieut. D. W. Kurtz, transportation chief, formerly with TWA; Lt. Col. D. W. Richwine, in charge of seaplane operations and formerly a co-pilot with TWA; Lieut. S. B. Hulburd, in charge of landplane operations, formerly a captain with TWA; Lt. Comdr. R. W. Beecher, in charge of engineering, formerly division engineer of PAA; Lt. Comdr. N. A. Lieurance, in charge of aerology, formerly with TWA; Lieut. (jg) H. W. Shipman, in charge of statistics, formerly with TWA

Something Different in Ground Transports Was Used by NATS on Saipan Until —

THE photo accompanying this story is one of the prize "shots" of the Pacific war. It was taken on Saipan a few weeks after the initial assault waves moved onto the island and shows the first four-engined R5D Douglas transport of Naval Air Transport Service in the background, and the complete ground transport fleet of NATS on Saipan in the foreground.

It's a story out of Hollywood, except that it's true. When NATS first started flying into Saipan, it used the old Jap runway before the runway was out of range of enemy fire. But NATS had no jeeps or trucks available. Lieut. Jim Cordon, an imaginative and enterprising gentleman if there ever was one, had to line up some sort of ground transport to haul the mail bags and supplies from the sleek, shiny planes to the newly-erected tents that served as offices.

Cordon found a two-wheeled Jap ox-cart, shown above, and noticed a water buffalo roaming around loose. It seems that the Japs used these water buffalos to till the sugar cane fields. In no time at all, NATS had its transport. Then Cordon got word that a Jap Nissen sedan had been found by some of the troops and had been hidden away for bartering. For two bottles of hard stuff, Cordon managed to "buy" the sedan, but even then it couldn't be used because all such property was supposed to be reported to the authorities. Using fresh daily newspapers flown from San Francisco as his bartering weapon, Cordon managed to obtain "title" to the sedan, sight unseen, from the proper authority. So the sedan went into service to haul passengers through the mud to the tents.

All went well until some of the troops got tired of K rations, kidnapped the water buffalo, and it was said the barbecue was really a good feast. With half its ground transport eaten up, NATS had to send a dispatch to Honolulu, and in due course a jeep was put on the next R5D bound for Saipan.

All of which goes to prove that operating the latest four-engined landplanes into a forward combat area is an excellent idea but you may have to go back a few thousand years for your ground transportation. Incidentally, the cart is still on display in an abandoned Jap hangar in case you get out that way, and the sedan is pretty much out of order. NATS is now operating to Guam with landplanes, Saipan being rather busy, it seems, with something called the Superfortress.

Saipan Transportation— Ground transportation was a little scarce at Saipan when the Naval Air Transport Service flew in its first four-engine R5Ds while the fighting against the Japs continued a short distance away. In the foreground is a water buffalo, rounded up by NATS personnel, hitched to an ox cart for hauling mail bags. This lasted until the buffalo was barbecued. At the left is a Jap Nissen sedan used to haul passengers until a jeep arrived.

traffic and sales; Lieut. (jg) R. R. Nibley, in charge of schedules, former assistant manager of market research for Lockheed Aircraft; Ensign W. C. Richey, assistant engineering, formerly service engineer of Douglas Aircraft.

The staff personnel director is Lt. Comdr. Paul Graham, a merchant in civilian life. In charge of supply is Lieut. S. F. Zimet and his assistant is Lieut. (jg) J. L. Brumit, formerly in the TWA cost accounting department. In charge of construction is Lt. Comdr. W. W. Hicks, formerly with Consolidated Oil, and his assistant is Lieut. (jg) V. D. S. Fox, formerly with PAA. Local liaison officer is Lieut. D. C. Lahey, formerly with Northern Trust Co. of Chicago.

Commanders and some of the top personnel of the squadrons are:

VR-2

Comdr. D. L. Mesker, USNR, formerly training officer of Naval Air Station at Hutchinson, Kansas, became Commanding Officer of VR-2 in November, relieving Comdr. W. M. Nation. Comdr. Mesker is a former airline pilot and commands the squadron operating flying boats to far-reaching Pacific points.

His executive officer is Lt. Comdr. H. B. Gordon, Jr., and his operations officer is Lt. Comdr. R. H. Proctor, formerly with the CAA. In charge of flight operations is Lt. Comdr. A. C. Habberley, former co-pilot with United Air Lines, and in charge of communications is Lieut. D. W. Steytler, formerly with TWA. A former Eastern Air Lines pilot, Lt. Comdr. T. H. Bothwell, is in charge of flight training. Others in VR-2 include Lt. Comdr. K. L. Caldwell, in charge of transportation; Lieut. (jg) R. D. Wynne, engineering; Lieut. (jg) E. A. Rose, flight dispatch, and Lieut. R. H. Burger, material.

VR-10

Comdr. E. B. Von Adelung, commanding the vital maintenance squadron, has one of the toughest assignments in the Pacific Wing. He was in the automobile finance business before going on active duty. His technical aide is Lt. Comdr. S. Paul Johnston, author of numerous books on aviation and Washington representative for Curtiss-Wright Corp. before going on active duty. The executive officer is Lt. Comdr. Guy Stollenwerck, and the administrative assistant is Lt. Comdr. J. G. Eliot. Others in VR-10 include Lieut. R. N. Thomas, in charge of maintenance dispatch; Lieut. D. W. Illigen, personnel; and Lieut. F. C. Curry, supply.

VR-11

Commanding Officer of this squadron, which operates four-engined landplanes from the mainland to far points in the Pacific, is Lt. Comdr. W. F. Peterson, formerly a pilot with TWA. His executive officer is Lt. Comdr. Frank Schank, of the First Boston Corp. Operations officer is Lt. Comdr. J. A. McFadden, formerly with United Air Lines, and communications officer is Lieut. W. E. Everson. Lieut. (jg) C. R. Walter is in charge of personnel.

VR-12

Lt. Comdr. M. L. Hoblit, former pilot with TWA, is the skipper of this squadron which handles all administration for the Pacific Wing. Executive Officer is Lt. Comdr. H. Eickhoff, Jr., a lawyer in civilian life. Operations officer is Lt. Comdr. W. E. Fallon, former pilot for United Air Lines.

Fowl Trouble

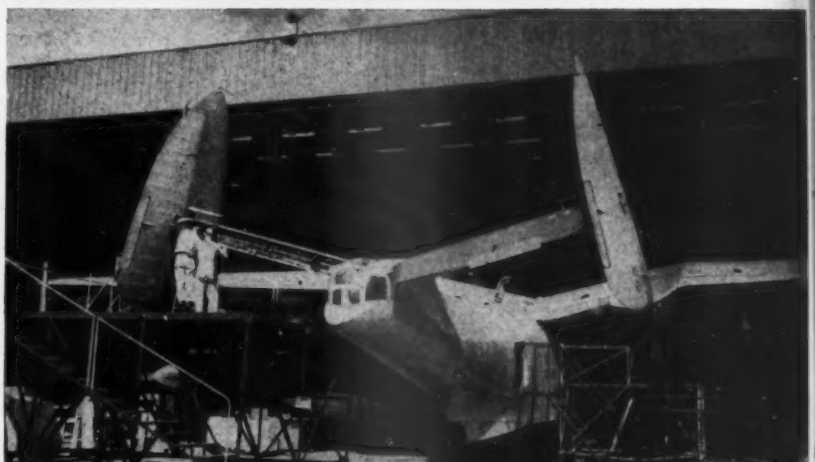
NATS in the Pacific is not sure that chickens like high flying. The New Zealand station got a request to send 20 hens and five roosters to an egg-hungry outpost and managed to round up enough live poultry for the shipment. On the flight all hell broke out, however. The hens began flapping and squawking and feathers flew around the cabin. Then the hens began dropping more eggs than a fleet of B-24's. This started the roosters to crowing. The boys blamed it all on the altitude and swore there wasn't a priority high enough to get any more live poultry on a Navy airplane. Quite a job to clean up too, we're told. The plane returned on an REM—translated, meaning "Ruined en masse".

Others include: Lt. Comdr. E. Roll... medical; Lieut. E. Stoll, education ... training; Lieut. T. R. Modrall, admini... tration; Lieut. F. F. Williams, personn... Lt. Comdr. E. R. Little, formerly wi... PAA public relations, welfare and ath... letics; Lieut. (jg) J. P. Lowry, disburs... ing; Lieut. W. B. Crawford, transporta... tion; Lieut. E. W. Stein, communication... Lieut. G. I. Hayes, engineering; Lieu... L. W. Raymond, aerology; Lieut. B. ... Bird, flight control; and Lieut. J. S. Za... man, officer in charge of NATS units.

VR-13

Operating in the Southwest Pacific ... connecting with VR-11 and VR-2, th... squadron was commanded by Lt. Comdr. C. E. Lamplough, former pilot for United Air Lines. His executive officer is Lt. Comdr. Al T. Martin, a lawyer from Chicago. Among the officers are Lieut. J. A. Jett in charge of operations; Lieut. (jg) A. T. Sulmonetti, personnel; Lieut. (jg) C. B. Dennison, communication; Lieut. (jg) F. V. McConkey, aerology; Lieut. (jg) E. J. Boyd, education and welfare and Lieut. (jg) R. H. Block, disbursing.

NATS-PAC route mileage is now over...



NATS Overhaul in the Pacific— These photos show how Naval Air Transport overhaul is done at a Pacific base. Both landplanes and flying boats are taken into elaborate nose hangars for maintenance and overhaul at the Naval Air Station, Honolulu. At the top is a twin-engine Douglas R4D and at the bottom is a twin-engine Martin PBM Mariner, which was used by NATS for transport work in the Pacific prior to Nov. 1. Mechanics have ready access to all parts of the planes with several galleries and floors for parts and equipment. The warm climate in the Hawaiian Islands permits outdoor work at all times.

Control Tower and Administrative Building at Naval Air Station in Honolulu which houses COMNATSPAC, the command headquarters of the Pacific Wing of Naval Air Transport Service and the passenger terminal for NATS.

The Air Priorities Office which handled traffic for NATS, ATC and TAG occupied this somewhat damaged Jap airport building. It was made of concrete and rather more opened to the weather than is indicated.

The elaborate, comfortable and luxurious passenger terminal for NATS on Saipan. Believe it or not, it consisted of just this one small tent. In background is an old Jap hangar which was considerably damaged in the invasion.

27,000 miles and growing all the time. That's more than the distance around the world at the equator.

The most widely separated points on the system are San Francisco and Sydney —7,800 miles. Other main route mileages are:

San Francisco-Manus, 6,516 miles
Sydney-Saipan, 3,655 miles
San Francisco-Saipan, 6,468 miles

The shortest "shuttle" route on the NATS system is 1,123 miles, the route from Noumea to Auckland. Other "shuttles" are Honolulu-Midway, 1,313 miles, and Tutuila-Tarawa, 1,601 miles.

The longest non-stop flight is that between San Francisco and Honolulu—2,407 miles. NATS-PAC planes were scheduled some months back to fly this route, which is equal to a non-stop flight from coast to coast, 22 times a day.

As an indication of the amount of flying, the Pacific Wing in October, 1944, flew well over 3,000,000 miles, enough to fly around the world four-and-a-half times every day, or across the entire U. S.

A Coronado PB2Y3 operated by NATS shown on the seaplane ramp at Saipan after a 6400-mile flight from the mainland. Some of the NATS personnel shown above are proudly displaying a Jap flag. When picture was taken there were still Japs hiding out in the hills beyond.

44 times a day. The scheduled miles now are about equal to those of TWA and United combined.

The San Francisco-Saipan route requires about 39 hours elapsed flying time. A passenger could leave Saipan at 5 P.M. on a Saturday, and because of crossing the International Date Line, he would arrive in San Francisco at 2:30 P.M. Sunday in time for Sunday dinner.

In August, 1944, NATS in the Pacific was credited with 40% of the plane miles scheduled for air transport operations in the Pacific, and had grown to the point where its scheduled plane miles equalled 27% of all domestic U. S. airlines' mileage as of last spring.

The safety record of NATS has been 100%, although one fatal accident of a contract carrier occurred July 31, 1944, when a PB2Y3 crashed on take-off at a South Pacific base. There were five survivors among the 27 persons aboard.

More details of Pacific air transport services will be given in ensuing articles.

'Captain Tommy' Adapts Genius of Domestic Transport to Trans-ocean Flying in Pacific

THE MAN who is more responsible than anyone else for developing and molding the Pacific Wing of NATS into a smooth and efficient service is a man who's name is a famous one in American air transport history—Capt. D. W. Tomlinson, USNR, former vice president in charge of engineering for Transcontinental & Western Air, Inc. "Captain Tommy" is prone to pass on the credit to the men down the line, but everyone in the organization knows that it is he who has provided the genius of domestic air transport to trans-ocean flying in the broad Pacific.

A half hour's conversation with Captain Tommy brings out some meaty observations, as well it might. For he has taken a big assortment of trained airline men and many more untrained men from all walks of civilian life and welded them all into an airline outfit. As a landplane man flying within the U. S., Captain Tommy suddenly found himself with the job of developing an airline operating 100% over water and the longest route being a mere three times the length of TWA's longest route in the U. S.

He's proud of NATS and the pioneering it has done. And especially is he proud of the 100% safety record.

"We've learned that there is no mystery to trans-ocean flying," he says. "We can debunk any mystery that existed before."

One reason for this statement is that NATS has taken relatively young and inexperienced pilots by previous standards and turned them out as efficient trans-ocean pilots. But, as Captain Tommy would put it, these men must first have had the sound training the Navy provides, and a smattering of air transport training in addition.

"About 90% of our pilots are at the point of age and experience where the U. S. airlines would not have hired them as co-pilots before the war," he said.

As for the Pacific weather, Captain Tommy has some pertinent observations.

"The weather from the west coast of the U. S. to the Marshall Islands on the west, and Espiritu Santo on the south is about the simplest flying weather I've ever encountered. The so-called tropical fronts are nothing but rain and a little weather.

"We haven't had enough experience yet in the typhoon area to draw long-range conclusions, but this area will have to be studied and watched. With our R5D's it will probably be possible to fly around the typhoon areas.

"Below Espiritu Santo, to Noumea and Auckland, it isn't really bad, but sometimes the weather closes in and it's necessary to cancel a flight. With adequate radio approaches, this area will be okay.

"Nowhere in the Pacific have we found the turbulence comparable to a cold front in the eastern U. S."

On the ever-present subject of landplanes versus seaplanes, Captain Tommy remains a landplane man, although he is high in his praise of the work the flying boats have done in the Pacific war areas. He believes night takeoffs of heavily loaded flying boats carry more risk than do the takeoffs of landplanes, and he pointed out the smaller number of alternate areas available to the flying boats as another handicap.

As for the postwar, "In my judgment, commercial flying in the Pacific will be with landplanes."

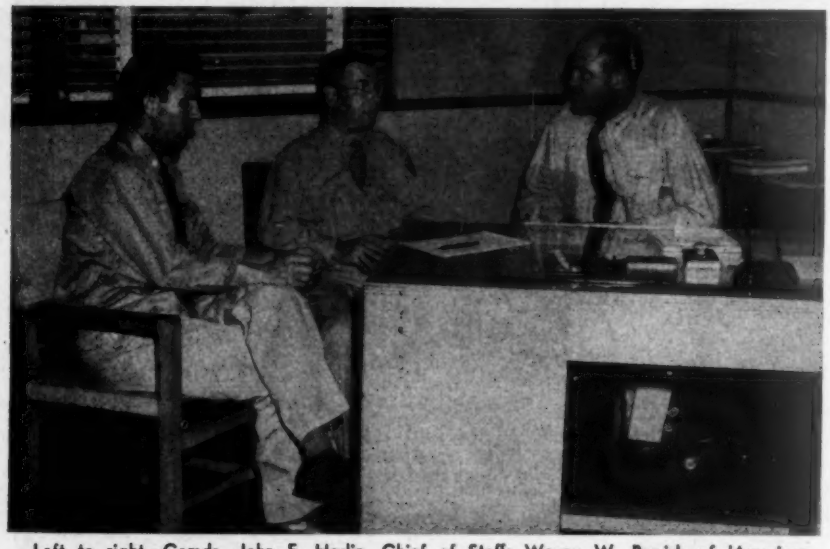
Postwar commercial flying must be at night as well as day, following the NATS and ATC flying procedures now in the Pacific. "You can't support big airplanes by having them sit all night," he said.

"I don't share all this wild optimism about postwar commercial operations in the Pacific. There will unquestionably be a material increase over the prewar figures, but I can't picture it on the scale that various airline and government propaganda experts are trying to build up."

Captain Tomlinson said NATS is getting eight hours a day utilization of the PB2Y3 Coronados, and 7.14 hours on the R5D's but the latter figure will go up considerably as soon as a temporary shortage of a few parts is alleviated.

He admits that there is one advantage NATS has over commercial airlines. The NATS planes are loaded up at the home base for the final destination, with very little cargo bound for intermediate points. This makes for a more efficient set-up than would be possible under other conditions.

"Our job is to provide the naval activities at the front with a frequent, adequate and safe air transport service. We've done it, but we've done it by taking men with limited amounts of training and men who hadn't the slightest idea of air transport, and putting them to work with definite responsibilities, and training them as best we can. They've done a marvelous job."



Left to right—Comdr. John E. Harlin, Chief of Staff; Wayne W. Parrish of 'American Aviation'; and Capt. D. W. Tomlinson at COMNATSPAC, Honolulu.

Somebody's Writing

The Pacific Wing of Naval Air Transport Service estimates that during the year 1944 it transported 32,700,000 lbs. of mail or about 10,000,000,000 letters—enough to give every American man, woman and child about 70 pieces of mail. The boys out there are doin' a powerful amount of writin', it would seem.

Airline Men With NATS-Pacific

The following tabulation shows the number of officers and men now with the staff and five squadrons of the Pacific Wing of NATS who were formerly employed by U. S. commercial airlines:

	Officers	Men
Alaska	1	..
American	20	11
Amer. Export	1	..
Braniff	5	..
Chi. & Southern	3	..
Colonial	1	..
Continental	..	2
Delta	3	..
Eastern	21	5
Hawaiian	2	..
Mayflower	..	1
Mid-Cont.	2	1
National	1	..
Northeast	10	..
Northwest	2	9
Pan American*	34	142
PCA	2	..
TWA	34	16
United	19	21
Western	2	1

** These figures do not include the large PAA personnel working under contract to NATS.*

On the NATS-Pacific staff, TWA has provided nine officers, Pan American has provided three officers and one enlisted man, Delta and Western one officer each, and United one enlisted man.

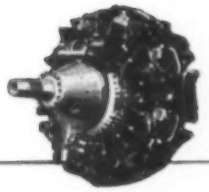
Greater Pay-Loads with Fill-in Freight

Greater still with Cyclones

Hotel rooms vacant overnight, empty seats in the orchestra, or a plane in flight with unfilled passenger or cargo space, all these represent revenue lost forever. The same holds true of any space sold by the hour or mile; anything less than capacity is a sales opportunity permanently lost.

In the air transport field, fill-in freight to build up full payloads is one way of getting capacity use on every flight. A constant stockpile of such freight, moving at preferential rates, fills the balance of weight and space capacity after loading passengers, mail and air express. Such rates gradually attract more and more commodities to air travel. The net results: full payloads and increased revenue on every flight.

To such flight operations, Wright Cyclones contribute an extra bonus in payload, due to their lower weight ratio and low fuel consumption. In addition, their ease of maintenance adds to the reasons why these dependable sources of power pay their way.



Cyclones Save 3 Ways

LESS WEIGHT—MORE PAYLOAD
LOWER FUEL CONSUMPTION
REDUCED MAINTENANCE

WRIGHT

Aircraft Engines

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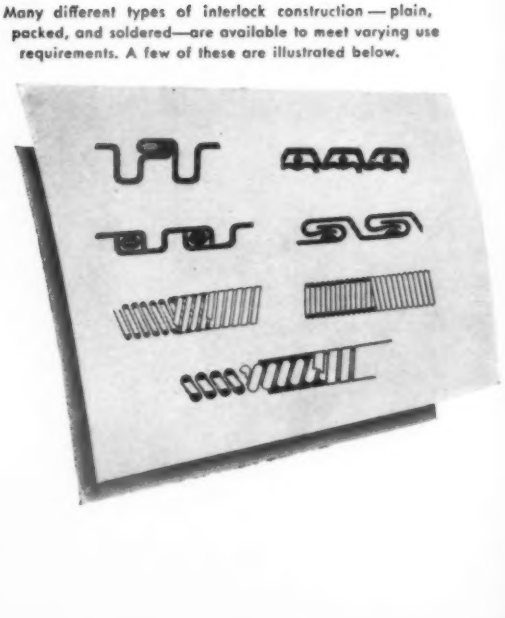
Breeze Flexible Conduit

for shielding or ducts

Breeze Flexible Tubing, manufactured in many diameters from a wide variety of metals, is used as ventilation and exhaust ducting in industrial, aircraft, marine and automotive applications. The same basic tubing, with the addition of a braided metal covering, becomes light-weight shielding conduit, used extensively for shielding ignition systems and any electrical circuit to insure dependable radio communication.

Manufactured from a continuous strip of metal, Breeze Flexible Tubing and Conduit can be furnished cut to length, with necessary end-fittings for any conduit installation.

Many different types of interlock construction — plain, packed, and soldered—are available to meet varying use requirements. A few of these are illustrated below.

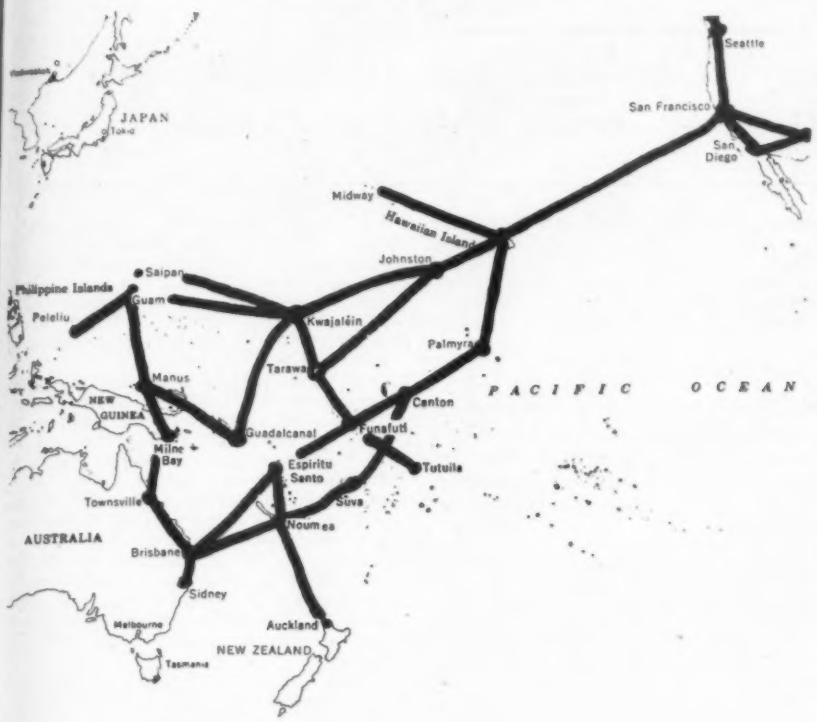


Breeze BREEZE MARK

CORPORATIONS, INC.

Newark, New Jersey

Map showing general outline of NATS routes in the Pacific. Wartime conditions require frequent route and terminal changes, and several routes are omitted for security reasons, hence the map provides only a generalized picture of the network. Reproduced from NATS Packet, journal of the Pacific Wing, Charles Conklin, Y1c, Editor.



ATC and NATS Give Details of Carrying Civilians for Fares

The Army Transport Command and the Naval Air Transport Service became formally available Jan. 1 for the carriage of civilians on a pay basis who are traveling in the national interest.

It was emphasized that these civilians must be on business deemed by the State Department to be important to this nation's interest.

ATC has in the past several months carried a few fare-paying civilian passengers. The set-up as of Jan. 1 is "formalized" by President Roosevelt's Oct. 24 executive order in which he directed the Army, Navy and State Department to cooperate in transportation of civilians.

Military Comes First

Military passengers and cargo are to be transported first; civilians are then to be carried on a "space available" basis. Fares charged for civilian travel are to be not less than the current U. S. commercial airline rate for transportation and accommodations of a comparable nature between corresponding points, the ATC announced. It is learned that ATC is working on a 12-cent per mile "base", charging not less than 12 cents a mile and in some cases charging more where airline fares are higher than 12 cents.

"In extending its services to certified civilians, the ATC will in no manner deviate from its regular routes, which were set up for military purposes. These services will continue to be primarily operated to meet military requirements at all times," ATC said.

NATS officers also emphasized this point, and doubt whether, at least at present, there will be much space available for civilians. Revenues from fare-paying civilians will be handled by ATC's revenue traffic division, which is being moved from Washington to New York at 141 Broadway. Lt. Col. J. W. C. Remaley is in charge.

CAB Amends Wartime Flight Regulations

The Civil Aeronautics Board last fortnight amended the "emergency flight rules" of the Civil Air Regulations (Section 60.95) to substantially reduce the wartime restrictions on civilian flying.

The original "emergency rules" were enacted immediately after Pearl Harbor for security reasons, and were first modified by the CAB in December, 1943. Military authorities, acting upon the request of the CAB and CAA, made these further amendments:

1. Requirements have been waived for the maintenance of guards, or for leaving aircraft in an inoperative condition when unguarded.

2. The existing requirement that aircraft land only at formally designated landing places is being abandoned Henceforth formal designation will be required only for those fields at which aircraft are regularly to be based, and occasional landings and take-offs may be made elsewhere at the pilot's discretion.

3. Owners of aircraft needing to base them at points not now regularly designated as landing areas may henceforth make application to the Administrator of Civil Aeronautics for the designation of areas which they wish to use.

4. No change is made in the requirement that in Eastern and Western vital defense areas each individual flight of civil aircraft must be approved by the Defense Command, which approval may be obtained in most cases through the Civil Aeronautics Administration.

5. In certain congested areas, and particularly in the vital defense areas military authorities may require establishment of local flying areas for each designated landing area, in order to avoid conflict with adjacent military activities. No flight clearance is necessary in vital defense areas when flights are confined to such local flying areas.

New Zealand Plans in the Making— Wing Commander E. A. Gibson is shown discussing New Zealand's commercial aviation program as Wayne Parrish of American Aviation Publications met with officials of the Civil Aviation Department of New Zealand in October. Left to right are Squadron Leader S. Meacham, acting controller of civil aviation during the absence of Wing Commander J. Buckeridge, then attending the International Aviation Conference; Wing Commander R. A. Kirkup; Flying Officer Leo White; Parrish; and Wing Commander Gibson.

Quiz on a Crucial Conference

Door of Opportunity in International Aviation Wedged Permanently Open by Action Taken at Chicago

(All during the International Aviation Conference at Chicago in November and early December, J. Parker Van Zandt was an alert observer. Now with The Brookings Institution in Washington, D. C., Mr. Van Zandt is author of a series of books on "America Faces the Air Age," the first two volumes of which have been published. Considering him one of the best U. S. authorities on international aviation, AMERICAN AVIATION *asked Mr. Van Zandt to analyze the Chicago conference for its readers.)*

By J. PARKER VAN ZANDT

NO ONE WHO PRETENDS TO BE INFORMED about aviation can afford to ignore the Conference which met at Chicago Nov. 1 to Dec. 7, with representatives of 54 nations present. Make no mistake, the International Civil Aviation Conference was an event of outstanding importance. It is a major landmark in aviation history, the full significance of which will become clearer as we approach the postwar period.

Perhaps the question-and-answer method will serve as a useful way to high light some of its important aspects. Here are five questions you should be able to answer:

1. Why is the 1944 International Civil Aviation Conference important?

Because the draft agreements drawn up at Chicago established the framework within which future international aviation will develop. Because the Conference was a meeting ground for an exchange of aviation views of 54 states. Because it was an attempt, in the midst of a desperate global conflict to be forehanded about postwar problems. Because the agreements signed form a part of the postwar peace.

2. What was accomplished at the Conference?

A great deal; much more than the bare listing of documents suggests. Those documents are:

(a) An Interim Agreement on International Civil Aviation;

(b) A Convention on International Civil Aviation;

(c) An International Air Services Transit Agreement;

(d) An International Air Transport Agreement; and

(e) Twelve resolutions and recommendations, included in the Final Act.

(a) The Interim Agreement, for the first time in history, creates a technical and advisory organization "for the purpose of collaboration in the field of international civil aviation" on a world scale. The provisional organization is intended to last until the permanent Convention comes into force, which it is hoped will be within the next three years. Anticipating that the interim organization will carry over largely intact, its composition and the powers and duties assigned it follow closely those provided on a more definitive basis in the permanent Convention.

(b) The Convention on International Civil Aviation deserves very careful reading. It has four main subdivisions: Part I relates to air navigation; Part II to the international civil aviation organization; Part III to international air transport; Part IV provides for the settlement of disputes, for amendments, and other general matters. Limitations of space permit mention of only a few outstanding features:

The Convention is clear-cut and up-to-date. It avoids the use of ambiguous terms such as "the right of innocent passage." It distinguishes between scheduled and non-scheduled commercial services. It provides a flexible means of handling technical annexes, to meet the legislative difficulties of countries such as the United States, Mexico, and others. (CINA, for example, tried for 17 years without success to adopt an airworthiness annex.)

It provides for a Council of workable proportions, responsible to a periodic assembly of all the contracting States. International airlines of member states must "file with the Council traffic reports, cost statistics, and financial statements showing, among other things, all receipts and the sources thereof." Existing as well as new aeronautical agreements must be registered with the Council.

Arrangement is also made for the Council to provide and maintain airports and other air navigation facilities where a member State may not be in a position to make available adequate facilities for the operation of international air services. Ways and means for handling disputes are outlined. A method of amending the Convention is provided which does not involve unanimous consent. And these are only some of the more important features of the Convention.

(c) The International Air Services Transit Agreement, sometimes referred to as the "Two-Freedoms Document," provides for multilateral exchange of the right of transit and non-traffic stops "in respect of scheduled international air services." An important provision of this Agreement, inserted at the insistence of the United States in the interest of smaller nations, protects the right of States to require reasonable commercial service, within the capacity available, from airlines using their territory for non-traffic stops. Most of the countries in the Americas, France, Netherlands, the United Kingdom, Turkey, India, and many others signed this Agreement in Chicago, and a substantial majority of all those represented at the Conference are expected to adhere in due course.

(d) The International Air Transport Agreement, or "Five-Freedoms Document," includes not only a reciprocal grant of the right of scheduled passage, covered by the Two-Freedoms Document, but also the right to trade; that is, permission to take on and put down passengers, mail, and cargo. As in the Transit Agreement, a country designates the route to be followed by an international air service crossing its territory, as well as the airports at which foreign planes may stop. Fair and reasonable charges are authorized for the use of airport and other facilities.

Under either the Transit or Transport Agreement, if any action resulting from the multilateral exchange of rights is deemed to cause injustice or hardship to any member State, the Council becomes a forum before which that country may present its case. Following appropriate findings and recommendations of the Council, in the event an offending State does not take suitable corrective action, it may be suspended from all rights and privileges under either Agreement by a two-thirds vote of the Assembly.

In the Transport Agreement there is the additional declaration of principle, in Article III, that "in the establishment and operation of through services due consideration shall be given to the interests of other contracting States so as not to interfere unduly with their regional services or to hamper the development of their through services." This Statement, together with the option in the succeeding article not to exercise any rights and obligations of intermediate "fifth-freedom" traffic (that is, traffic not destined for or originating in the territory of the State whose nationality the aircraft possesses), represents an attempt to meet the fear of some countries, especially in Europe, that competition from great world-circling routes would swamp their local operations.

(e) The Resolutions and Recommendations included in the Final Act should not be passed over lightly. They are by no means unimportant. They approve, for example, the adoption of the metric system "as a primary international standard." They provide a standard form of provisional air route agreement, the use of which (by nations not signing the general Transport Agreement) will go far to eliminate the discriminatory restrictions of the old prewar system.

Recommendations were approved for

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NO FIDDLING!

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early consideration of private international air law and for reviving CITEJA (the "Comité International Technique d'Experts Juridiques Aériens"). Arrangements were also made for continuing study and drafting of international standards and recommended practices and "such other studies as will promote the safe and efficient conduct of international air transportation."

3. What was not accomplished at the Conference?

All countries, for one thing, were not represented. Naturally the enemy States were not there; but Russia's failure to attend was keenly felt. Her absence rendered largely futile the various proposals of the British Commonwealth group to endow a world authority with restrictive power. Also missing were Argentina, Saudi Arabia. Neutrals, however, for the first time were permitted to participate in plans for the postwar world.

Unanimous agreement was not reached with respect to the rights and privileges of scheduled international air services. As Mayor LaGuardia said, in opposition to a motion of Lord Swinton, Chairman of the United Kingdom delegation, to close discussions before the Conference had yet evolved either of the two "Freedom" documents: "We started out to consider the problem and the question of the Five Freedoms . . . That was the major subject and if you will read the very document that you have just approved (the Interim Agreement), you will find that it is all built to administer, care for, supervise, to regulate air transportation, based on the Five Freedoms."

4. Was the Conference a success or a failure?

Unquestionably, on balance, it was a remarkable success. For the first time in recorded history a large part of the world was freely opened to the peaceful passage of scheduled airlines of participating States. In spite of bitter opposition, freedom of action in the air was retained for those able and fit to exercise it and willing to share it. The door of opportunity in international aviation was wedged permanently open.

Unanimous support was gained for a world organization to encourage and promote "the needs of the peoples of the world for safe, regular, efficient and economical air transport." Unanimous approval was achieved for the establishment of a base for common air practice throughout the world,—what the President of the Conference and Chairman of the U. S. delegation, Adolf A. Berle, Jr., called "the technical freedom of the air." The death knell of secret diplomacy in the air was sounded; the end of obstructive tactics and shameless exploitation of strategic geographic position, of diplomatic intrigue, discrimination, and private and monopolistic privilege.

Those who suggest the Conference was not a success betray their ignorance of the incredibly restrictive status of international aviation relations prior to the meeting in Chicago. They also fail properly to evaluate the scope and nature of the postwar problem which leaders of the United Kingdom are facing, and which determined to a large extent the degree of unanimity possible at Chicago.

In the light of these fundamental difficulties, the degree of agreement finally achieved, after five grueling weeks, was truly remarkable. As the Chairman of the Chinese delegation, Dr. Kia-ngua Chang, suggested at the final plenary session, many of the problems which appeared so difficult at Chicago "may vanish into the stratosphere" and fuller agreement may be anticipated as we all advance in knowledge and experience.

5. What happens next?

First, since the documents were signed *ad referendum*, the governments must confirm the signatures of their representatives. Upon notice by a sufficient number of States of acceptance as binding, the documents become effective provisionally as executive agreements, as in the case of the interim organization, or as treaties, as in the case of the permanent Convention.

Representatives of 37 States had signed the Interim Agreement by Dec. 21. Acceptance by only 26 States is necessary to bring the Agreement into effect. Since contracting States who do not accept within six months will lose their seats on the Council, it may be safely assumed that the Agreement will come into being sometime during the Spring or early summer. The initial twenty Council members, elected for a period of two years, are Canada, the United States, Mexico, El Salvador, Colombia, Peru, Brazil, and Chile in the Americas; the United Kingdom, Norway, Netherlands, Belgium, France, Czechoslovakia, Egypt, and Turkey in Greater Europe; and elsewhere in the world, Australia, China, India, and Iraq.

To a large degree the future of international aviation relations rests in the hands of this Interim Council. Its first task will be to elect a President and appoint a Secretary-General, on whom will thus fall a heavy responsibility for the future course of aviation.

Let me close with a note of warning: A battle half won is not victory. No one who holds that the freest possible exploitation of international air transport offers the best possibility for expanding world trade and a better world should suppose that such an opportunity is now assured. Only continued vigilance will prevent the forces of reaction and selfishness from sabotaging the splendid and promising achievements of the 1944 International Civil Aviation Conference.

NACA Studies Discussed at Wright Brothers Lecture; Capt. de Florez Gets Collier Award

ORVILLE WRIGHT was guest of honor at the annual Wright Brothers lecture sponsored by the Institute of the Aeronautical Sciences Dec. 17 in Washington in commemoration of the forty-first anniversary of the first successful flight of an airplane. The lecture was delivered by John Stack, chief of the Compressibility Research Division at the Langley Field laboratory of the National Advisory Committee for Aeronauitcs.

In connection with the lecture, Capt. Luis de Florez, USNR, was awarded the Robert J. Collier Trophy for 1943 for his contribution to the safe and rapid training of combat pilots and crews through the development of synthetic devices. Vice President Henry A. Wallace made the presentation.

Under the title, "Compressible Flows in Aeronautics," Stack discussed the military demand for high speed aircraft, particularly the problems resulting from the "compressibility effect." This is an effect which appears whenever the air flowing over any part of the wing, body, or other surface approaches the speed of sound—about 750 mph at sea level.

"Under such conditions shock waves form, the drag of the airplane increases at a precipitous rate, at the same time the lifting capacity of its wing deteriorates, and flight becomes difficult and hazardous if not impossible to sustain," Stack said. He discussed a series of studies initiated by the NACA, beginning in 1922, to get a better understanding of the phenomena and to develop ways of postponing or avoiding the compressibility effect.

Vice-President Henry A. Wallace is shown presenting the Robert J. Collier Trophy for 1943 to Capt. Luis de Florez, USNR, in a ceremony in Washington Dec. 17.

Pacts With Sweden and Denmark Pave Way for Opening of Services

Full Commercial Rights Exchanged In Agreements

PAVING the way for the early establishment of air service to Scandanavia, the United States Government Dec. 16 signed agreements with Sweden and Denmark, obtaining full commercial rights in those countries, and extending them similar rights in the U. S.

The Swedish agreement provides that authorized U. S. airlines are accorded rights of transit and non-traffic stops in Sweden, as well as the right to pick up and discharge international passengers, mail and cargo on a route from New York or Chicago to Stockholm. Swedish lines are granted the same privileges on the same route.

The agreement with Sweden is effective as of Jan. 1, 1945.

In its agreement with Denmark (an agreement similar to that with Sweden), the U. S. obtains rights in Greenland as well as Denmark. This agreement will "enter into force provisionally Jan. 1, 1945, and definitely upon confirmation by a free Danish government when such government shall have been established following the liberation of Denmark."

Both agreements resulted from discussions between representatives of the respective countries at the recent International Civil Aviation Conference in Chicago, and incorporate the standard clauses adopted at the Conference for use in bilateral agreements relating to scheduled air services.

Only a few weeks before, the U. S. had signed a similar agreement with Spain.

Following is the text of the agreement between the U. S. and Sweden:

The Governments of the United States of America and Sweden signed on September 8 and 9, 1933, an air navigation arrangement relating to the operation of civil aircraft of the one country in the territory of the other country, in which each party agreed that consent for the operations over its territory by air transport companies of the other party might not be refused on unreasonable or arbitrary grounds. Pursuant to the aforementioned arrangement of 1933, the two Governments hereby conclude the following supplementary arrangement covering the operation of scheduled airline services:

Article 1

The contracting parties grant the rights specified in the Annex hereto necessary for establishing the international civil air routes and services therein described, whether such services be inaugurated immediately or at a later date at the option of the contracting party to whom the rights are granted.

Article 2

(a) Each of the air services so described shall be placed in operation as soon as the contracting party to whom the rights have been granted by Article 1 to designate an airline or airlines for the route concerned has authorized an airline for such route, and the contracting party granting the rights shall, subject to Article 6 hereof, be bound to give the appropriate operating permission to the airline or airlines concerned; provided that the airline so designated may be required to qualify before the competent aeronautical authorities of the contracting party granting the rights under the laws and regulations normally applied by these authorities before being permitted to engage in the operations contemplated by this agreement; and provided that in areas of hostilities or of military occupation, or in areas affected thereby, such inauguration shall be subject to the approval of the competent military authorities.

(b) It is understood that either contracting party granted commercial rights under this agreement should exercise them at the earliest practicable date except in the case of temporary inability to do so.

Article 3

In order to prevent discriminatory practices and to assure equality of treatment, both contracting parties agree that:

(a) Each of the contracting parties may impose or permit to be imposed just and reasonable charges for the use of public airports and other facilities under its control. Each of the contracting parties agrees, however, that these charges shall not be higher than would be paid for the use of such airports and facilities by its national aircraft engaged in similar international services.

(b) Fuel, lubricating oils and spare parts introduced into the territory of one contracting party by the other contracting party or its nationals, and intended solely for use by aircraft of such other contracting party shall be accorded national and most-favored-nation treatment with respect to the imposition of customs duties, inspection fees or other national duties or charges by the contracting party whose territory is entered.

(c) The fuel, lubricating oils, spare parts, regular equipment and aircraft stores retained on board civil aircraft of the airlines of one contracting party authorized to operate the routes and services described in the Annex shall, upon arriving in or leaving the territory of the other contracting party, be exempt from customs, inspection fees or similar duties or charges, even though such supplies be used or consumed by such aircraft on flights in that territory.

Article 4

Certificates of airworthiness, certificates of competency and licenses issued or rendered valid by one contracting party shall be recognized as valid by the other contracting party for the purpose of operating the routes and services described in the Annex. Each contracting party reserves the right, however, to refuse to recognize, for the purpose of flight above its own territory, certificates of competency and licenses granted to its own nationals by another State.

Article 5

(a) The laws and regulations of one contracting party relating to the admission to or departure from its territory, of aircraft engaged in international air navigation, or to the operation and navigation of such aircraft while within its territory, shall be applied to the aircraft of the other contracting party without distinction as to nationality, and shall be complied with by such aircraft upon entering or departing from or while within the territory of the first party.

(b) The laws and regulations of one contracting party as to the admission to or departure from its territory of passengers, crew, or cargo of aircraft, such as regulations relating to entry, clearance, immigration, passports, customs, and quarantine shall be complied with by or on behalf of such passengers, crew or cargo of the other contracting party upon entrance into or departure from, or while within the territory of the first party.

Five Million in Orders Booked for Amphibians

Conditional orders totaling more than five million dollars for Republic Aviation Corp. Thunderbolt Amphibian personal planes, new postwar entry in the small aircraft field, were booked at the St. Louis convention of the National Aviation Trades Association last month, according to Alfred Marchev, Republic president.

The Thunderbolt Amphibian four-passenger family plane is tentatively priced at "probably under $4,000." At this figure the five million dollars in orders would represent approximately 1250 planes, or a production rate of 104 a month for a year.

Article 6

Each contracting party reserves the right to withhold or revoke a certificate or permit to an airline of the other party in any case where it is not satisfied that substantial ownership and effective control are vested in nationals of a party to this agreement, or in case of failure of an airline to comply with the laws of the State over which it operates as described in Article 5 hereof, or to perform its obligations under this agreement.

Article 7

This agreement and all contracts connected therewith shall be registered with the Provisional International Civil Aviation Organization.

Article 8

Either contracting party may terminate the rights for services granted by it under this agreement by giving one year's notice to the other contracting party.

Article 9

Except as may be modified by the present agreement, the general principles of the aforementioned air navigation arrangement of 1933 as applicable to scheduled air transport services shall continue in force until otherwise agreed upon by the two contracting parties.

Article 10

In the event either of the contracting parties considers it desirable to modify the routes or conditions set forth in the attached Annex, it may request consultation between the competent authorities of both contracting parties, such consultation to begin within a period of sixty days from the date of the request. When these authorities mutually agree on new or revised conditions affecting the Annex, their recommendations on the matter will come into effect after they have been confirmed by an exchange of diplomatic notes.

Annex to Air Transport Agreement Between the United States of America and Sweden

A. Airlines of the United States authorized under the present agreement are accorded rights of transit and non-traffic stop in Swedish territory, as well as the right to pick up and discharge international traffic in passengers, cargo and mail at Stockholm, on the following route:

New York or Chicago, via intermediate points, to Stockholm; in both directions.

B. Airlines of Sweden authorized under the present agreement are accorded rights of transit and non-traffic stop in the territory of the United States, as well as the right to pick up and discharge international traffic in passengers, cargo and mail at New York or Chicago, on the following route:

Stockholm, via intermediate points, to New York or Chicago; in both directions.

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Clayton Releases Breakdown Of Planes Declared Surplus

A BREAKDOWN of the various types of planes included in the 23,391 which had been declared surplus as of Dec. 1, together with a listing of the types that have been sold, has been released by W. L. Clayton, Surplus War Property Administrator.

Of the 6,239 surplus planes that were sold and paid for up to Dec. 1, the largest portion was made up of light civilian types which had been requisitioned from their owners after Pearl Harbor for use in preliminary Army and Navy training programs. In addition, 911 former Army and Navy planes, largely trainers and liaison planes for artillery spotting and short-range communication flights, have been sold.

The 23,391 planes declared surplus are composed largely of trainer types. Most of these have had long hours in Army and Navy training programs. Only the light trainers are adaptable to civilian use, the heavier planes with high horsepower engines being too expensive for the ordinary private pilot to operate.

Combat aircraft listed are mostly obsolete fighters and bombers which have out-lived their military usefulness or are beyond economical repair. They include early models of the Airacobra, the Warhawk, the Martin Marauder, the Mitchell, and obsolete editions of the Flying Fortress and the Liberator. Few of these are adaptable for commercial use and most of them are destined to land eventually in salvage depots or on the scrap heap.

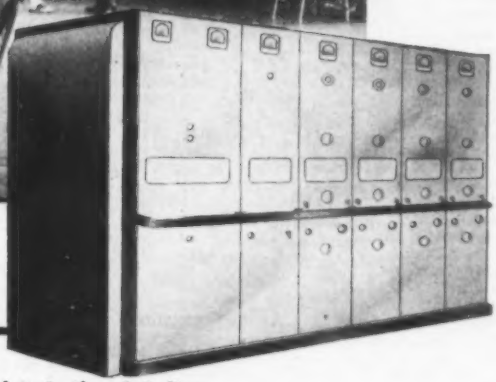
A detailed list of surplus inventory and sales follows:

Military Types

Manufacturer	Type	Total Declared Surplus	Total Sold
Liaison—One Engine			
Taylorcraft	L2	1116	269
Aeronca	L3	766	412
Piper	L4	79	1
Interstate	L6	157	33
Stinson	L9	8	1
	L12	3	....
Total		2129	716
Primary Trainer—One Engine			
Stearman	N2S	180	....
Timm	N2T	214	....
Navy	N3N	558	1
Stearman	PT13	36	....
St. Louis	PT15	2	....
Ryan	PT16	2	....
Stearman	PT17	876	....
Stearman	PT18	2	....
Fairchild	PT19	3714	98
Ryan	PT20	6	....
Ryan	PT22	740	81
Ryan	PT23	1022	....
Ryan	PT25	2	....
Stearman	PT27	180	....
Total		7534	180
Basic Trainers			
Consolidated	BT7	1	....
North Amer.	BT9	112	1
Fleetwings	BT12	6	....
Vultee	BT13	2363	....
Vultee	BT15	934	....
Curtiss	SNC	1	....
Stearman	XBT-17	1	....
Total		3418	1
Advanced Trainer—One Engine			
North Amer.	AT6	4	....
Republic	AT12	20	....
Noorduyn	AT16	1	....
North Amer.	BC1	70	....
Total		95	....
Advanced Trainer—Two Engine			
Beech	AT7	2	....
Cessna	AT8	1	....
Curtiss	AT9	360	....
Beech	AT10	480	1
Beech	AT11	1	....
Cessna	AT17	439	....
Lockheed	AT18	100	1
Federal	AT20	24	....
Fairchild	AT21	2	....
North Amer.	AT24	1	....
Fairchild	XAT-14	1	....
Stearman	XAT-15	1	....
Total		1412	2
Reconnaissance—One Engine			
Douglas	RO-38	1	....
Douglas	RO-46	10	....
North Amer.	RO-47	68	....
Curtiss	RO-52	40	....
Total		119	....
Reconnaissance—Multi Engine			
Lockheed	F4	3	....
Lockheed	F5	9	....
Boeing	F9	1	....
Total		13	....
Fighters—One Engine			
Republic	P35	7	....
Curtiss	P36	15	....
Bell	P39	690	....
Curtiss	P40	87	....
Republic	P43	27	....
Curtiss	P46	1	....
Republic	P47	54	....
North Amer.	P51	1	....
Curtiss	P60	1	....
Bell	P63	1	....
North Amer.	P64	4	....
Bell	RP400	5	....
Total		893	....
Fighters—Two Engine			
Lockheed	P38	28	....
Douglas	P70	2	....
Lockheed	P322	26	....
Total		56	....
Bombers—One Engine			
Curtiss	A12	1	....
Northrop	A17	49	....
Curtiss	A18	2	....
Douglas	A24	231	1
Curtiss	A25	283	....
Vultee	A31	1	....
Douglas	A33	13	....
Brewster	A34	98	....
Vultee	A35	8	....
North Amer.	A36	33	....
Vultee	V72	17	....
Total		736	1
Bombers—Two Engine			
Douglas	A20	43	....
Douglas	A26	2	....
Lockheed	A28	17	1
Lockheed	A29	11	....
Douglas	XB7	30	....
Martin	B10	4	....
Douglas	B18	81	....
Douglas	B23	7	....
North Amer.	B25	6	....
Martin	B26	58	....
Vega	B34	108	....
Lockheed	B37	10	....
Vega	R37	29	....
Consolidated	XP-4Y	1	....
Total		407	1
Bombers—Four Engine			
Boeing	B17	73	....
Consolidated	B24	57	....
Boeing	XC-108	1	....
Total		131	....
Utility Cargo—One Engine			
Beech	C43	40	5
Fairchild	C61	26	....
Howard	C70	8	....
Spartan	C71	7	1
Waco	C72	9	....
Cessna	C77	1	....
Harlow	C80	2	....
Stinson	C81	19	2
Lockheed	C85	1	1
Fairchild	C86	2	1
Cessna	C94	2	....
Vega	C101	1	....
Rearwin	C102	2	....
Grumman	C103	1	....
Total		121	10
Light Transports—Two Engine			
Douglas	A4	1	....
Lockheed	XC35	1	....
Lockheed	UC36	4	....
Lockheed	UC40	1	....
Cessna	UC78	858	....
Total		865	....
Medium Transports—Two Engine			
Douglas	C32	2	....
Douglas	C47	1	....
Lockheed	C60	1	....
Douglas	C67	11	....
Curtiss	C76	8	....
Total		23	....

'Copter Ferrying Team— Lieut. Thomas R. Tipton (left) and Flight Officer Vernon R. Mitchell are the first pilots of the Ferrying Division, Air Transport Command, to complete deliveries of helicopters. On Dec. 3, each of them accepted a Sikorsky craft at the United Aircraft plant, Bridgeport, Conn., and delivered it to Newark. The Ferrying Division thus maintained its record of providing men who can pilot any aircraft—from the B-29 to the R-4.

AIRPORT LOUNGE at the TACA HEADQUARTERS at TEGUCIGALPA HONDURAS



Comfort at the Airport...

SAFETY IN THE AIR

One of RADIO RECEPTOR'S most valuable contributions to safety in the air is its

3 KW MULTIPLE UNIT GROUND STATION TRANSMITTER

This equipment, Type CT-3000—"THE GLOBE GIRDLER," is used at airports for communication with planes and with other airports—for long distance as well as local communication. It is ruggedly designed for continuous use under adverse and rigorous conditions. Transformer and coils are impregnated for operation in a tropical climate.

OPERATING CHARACTERISTICS

The transmitter assembly is composed of individual units, one for each RF channel, one for each modulator, and one for the rectifier power supply unit. The RF and modulator units are interwired and connected to operate from the common rectifier power supply unit.

FREQUENCY RANGE—2 to 20 mc. RF units are supplied with coils and capacitors to operate at a single specified frequency and output load. Components are available for operation on any other frequency and output load impedance within the limits specified.

POWER OUTPUT—2.5 KW continuous, 3 KW intermittent service.

FREQUENCY CONTROL—Low temperature coefficient crystal control at a sub-multiple of output frequency.

RF LOAD IMPEDANCES—Grounded or balanced transmission line loads—50-700 ohms. Loading inductor or series condenser available on special order for working directly into reactive antenna.

TYPE OF TRANSMISSION—A-1 (CW Unmodulated telegraph), up to four simultaneous channels: or A-3 (telephone Modulated carrier), up to two simultaneous channels.

MODULATION—High level modulation of RF power amplifier by means of Class B audio modulator.

NOISE LEVEL—Carrier noise 40 db. below 100% modulation.

KEYING—High speed (200 words per minute) electronic keying standard. Slow speed keying of oscillator available on special order.

POWER SUPPLY REQUIREMENTS—230 volts 50/60 cycles, 3 phase.

Also available in output powers of 1 and 5 KW. Circular on request.

RADIO RECEPTOR COMPANY, Inc.

251 WEST 19th STREET **NEW YORK 11, N.Y.**

SINCE 1922 IN RADIO AND ELECTRONICS

	*Rotary Wing Aircraft		
Kellett	O-60	6	....
	*Aerial Targets		
Culver	PQ-8	3	....
	*Gliders		
Waco	CG3	1	1
Schweiser	LNS-1	11	....
Frankfort	TG-1	29	....
Schweiser	TG-2	21	1
	TG-3	112	....
Leister Kaufman	TG-4	145	2
Aeronca	TG-5	129	....
Taylorcraft	TG-6	196	....
Piper	TG-8	229	34
Briegleb	TG-9	2	....
	TG-13	2	....
Pratt Read	TG-32	73	....
Piper	LNP-1	3	....
Aeronca	LNR-1	1	....
Total		954	38
**Grand Total		23391	6239

Civilian Types

(As of Nov. 15)

Liaison		
Aeronca	638	600
Interstate	204	204
Luscombe	97	91
Monocoupe	1	1
Piper	2644	2347
Porterfield	207	201
Taylorcraft	323	301
Total	4114	3745
Utility Cargo		
Beechcraft	16	15
Bellanca	1	1
Cessna	14	13
Curtiss-Robin	2	2
Fairchild-Cabin	115	115
Howard-Cabin	10	5
Rearwin	20	20
Spartan	2	2
Stinson	426	415
Vega	2	2
Waco	69	69
Total	677	659
Primary Trainers		
Aerocraft	2	....
Fairchild-Open	25	22
Fleet	10	9
Great Lakes	1	1
Howard-Open	27	18
Laird	1	1
Meyers	73	66
Ryan	25	25
Stearman	1	1
Timm	4	4
Travelaire	5	5
Waco-Open	474	401
Total	648	553
Grand Total	5439	4957
***Total	5439	5328

**Not included in Grand Total.*
***Includes Military and Civilian Types.*
****Revised total for December 1, 1944—detailed breakdown not yet available.*

Clayton Opposed to Cartels, He Tells Senate Committee

William L Clayton, nominated for appointment as assistant secretary of state for air, has revealed to the Senate Foreign Relations committee that he is opposed to cartels. When international agreements are entered into between governments in respect to some commodities in which there is a burdensome surplus, "the consuming countries should participate in formation and administration of such agreements," and they should be "temporary in character" and should emphasize as the principal objective "the shifting from inefficient to efficient production," he declared.

Navy Now Has 35,000 Planes, 47,000 Pilots, Report Reveals

Appropriations Reflect Tremendous Expansion In Naval Aeronautics

THE GROWTH of the air arm of the U. S. Navy from 2,199 planes in 1940 to 35,575 at the end of last September, is graphically told in a report recently issued by the Naval Affairs committee of the House entitled, "The Progress of the War Effort."

Pilot personnel to man these planes has kept pace with the manufacturing program, the report reveals. At the end of August, 1944, there were available 47,276 Navy and Marine Corps pilots, or more than seven times the number in service at the time of Pearl Harbor. The civil personnel in the aeronautical organization, which stood at 5,587 in 1940, had grown to 109,153 as of last Oct. 1. At this time, there were 24,336 ground officers and 228,356 enlisted men holding petty officer ratings in the aeronautical branch.

Appropriations made by Congress reflect the tremendous aeronautical expansion that has taken place from 1940 to 1945 in the Navy. For the fiscal year beginning July 1, 1940, the air appropriation was $452,320,000, but for the next fiscal year, the amount had jumped to $6,189,444,100. For 1943 the appropriation was $5,257,981,470; 1944, $4,583,725,000 and 1945, $4,600,640,000.

The report shows that on July 1, 1940, the Navy had on hand only 1,741 service planes of all types. By the end of the year, this figure had grown to 2,199; by the end of 1941 to 5,260; 1942, 11,813; 1943, 25,892 and 1944 (9 months) 35,575. Engine deliveries reached a high in 1943 with 65,426, and 50,268 were listed for the first nine months of 1944.

A breakdown of aircraft production for the Navy follows:

The Naval Air Transport Service on Oct. 1, 1944 had in operation 327 aircraft, divided between the following types of craft: 60 four-engine landplanes, 70 four-engine seaplanes, 145 two-engine landplanes and 52 two-engine seaplanes. In addition, 49 small miscellaneous airplanes are used for training purposes.

NATS began operations in March of 1942 with two flights weekly between Norfolk and Boston and Norfolk and Corpus Christi, representing approximately 2,200 route-miles. In September of this year, the report states, the Navy had increased these operations to 80,000 route miles on regular schedules, which on some routes called for 75 flights per week. The estimated 200 officers and men comprising NATS Mar. 9, 1942 had grown to 18,183 as of Oct. 1, 1944 and in addition there were 7,876 people employed by contract operators.

In September of 1944 NATS carried 56,166 passengers for a total of 73,106,606 passenger-miles and carried 7,529 tons of cargo and mail for a total of 22,120,699 ton-miles. Total plane miles flown have increased from 3,258,347 in October, 1943, to 7,443,278 in September of this year. The domestic airlines of this country carried an average of 23,986 passengers each month during 1943 for an average of 136,883,053 passenger-miles per month. Obviously this discrepancy in ratio between passengers and passenger-miles flown by NATS and the domestic airlines is due to the large number of four-engine transport planes in Navy service.

Experimental Program Detailed

The Navy's experimental program includes the development of large, multi-engined, long-range land-based transports with supercharged cabins for high speed, high altitude cruising, and a cargo version of the Mars flying boat, which the report states is to be one of the world's most efficient aircraft from the standpoint of cost per ton-mile of cargo carried.

Under the heading of engineering advances, the report states that during the past four years, the top speeds of fighter aircraft in operation with the fleet have been increased by approximately 100 mph, ranges have been nearly doubled and armament has more than tripled in effectiveness.

Technological advancement permitting the development of larger power plants of advanced design and the realization of improved weight and horsepower ratios has made it possible to develop one-third more horsepower for a given engine than was possible in 1940.

"The successful development of anti-detonant injection systems has made available still higher engine power for combat emergencies," the report states. "The field of jet propulsion and other related sources of power is being fully explored."

	Total planes accepted from Navy plants[1]	Total planes accepted by Navy[2]	Total planes retained for Navy use	Estimated dollar value of planes retained for Navy use[3]
1940 (second half)	377	511	511	$ 24,134,000
1941	2,486	3,638	3,500	152,967,000
1942	6,305	9,708	8,391	525,995,000
1943	16,695	23,144	20,277	1,688,867,000
1944 (through September)	19,552	22,896	19,859	1,286,172,000[4]
Total	45,415	59,897	52,538	$3,678,135,000

[1] *Includes Navy procurement for Navy, Army Air Forces, and Lend-Lease.*
[2] *Includes Navy procurement for Navy, Army Air Forces, and Lend-Lease; and Army procurement for Navy.*
[3] *Based on Apr. 1, 1944, contract prices in the case of fixed-price contracts and the estimated original cost plus the fixed fee for the cost-plus-fixed-fee contracts. Prices used are constant prices for complete planes, less component spares and spare parts, and include cost of airframe, engines, propellers, instruments, radio, radar, armament, and miscellaneous equipment.*
[4] *For first six months of 1944 only.*

Industry Makes Good Showing in Preventing Accidents, NSC Reports

The National Safety Council reports that the aircraft manufacturing industry showed good results in accident prevention during 1943, with the average frequency rate 9 per cent below the 1942 rate. The decrease in the severity rate was 21 per cent.

All types of aircraft manufacturing plants averaged 9.91 for frequency of accidents and .47 for severity in 1943. The frequency rate was 32 per cent below and the severity rate was 61 per cent below the average for all industries.

A feature in the 1943 experience of the industry was a decrease of 50 per cent in the frequency of fatalities from the previous year, the Council reported. The improvement in 1943 injury rates of the entire industry was partly due to the lower rates achieved by large plants—.54 in comparison with .65 for small plants.

Plants engaged in the manufacture and assembly of aircraft made the largest reductions in injury rates in comparison with 1942—22 per cent for frequency and 36 per cent for severity. Injury rates during the past three years averaged higher in the manufacture and assembly of aircraft than in the production of parts and engines.

"The average frequency rate of manufacturing and assembly plants was 10.83 for the past three years in comparison with 8.31 for parts and 4.21 for engines. Lower rates for the industry in the future, therefore, depend considerably on reducing the rates of manufacturing and assembly plants which have the greatest exposure."

Henry Hill Resigns

Henry L. Hill, member of the CAB's general counsel staff for the past six years, has resigned effective Jan. 1 to join the law firm of Pruitt, Hale and Coursen in New York.

Wright Reviews 1944

CAA's Aid in Helping Formulate World Technical Standards Cited

Administrator Proud Of Part Played by Agency at Conference

IN a year-end review of Civil Aeronautics Administration activity, T. P. Wright, Administrator, said the active participation of the agency in helping to formulate technical standards for world flying at the International Civil Aviation Conference stood out as a highlight of developments which laid the groundwork for a vast expansion of civil flight.

Wright reminded the 11,000 CAA employes who received the review, that their first duty is to support of the war effort, but that they also have ahead of them a key role in facilitating the conversion of the 20 billion dollar aviation industry.

"Our recommendation for construction of 3,050 new airports and improvement of 1,625 existing fields is probably the first requisite for development of postwar flying on a scale that will result in a market that will utilize any substantial part of today's aircraft production capacity," he said.

Further steps suggested by him included simplification of regulations in accordance with many CAA suggestions now before the Civil Aeronautics Board; a 20 million dollar modernization of CAA radio aids to flying to accomodate increased traffic in all weather; stimulation of aeronautical education and flight training activity by a limited program of federal aid to colleges; and CAA cooperation with manufacturers in development of aircraft that will have broad popular appeal.

While the CAA during the year has continued to make "winning the war" its primary purpose, Wright said that some transition period activities have commenced. The agency has planned extensively for the expansion of civil aviation in all its phases—air transport, scheduled and nonscheduled; private flying, airports, education, foreign operations and technological improvement—for the postwar years.

Reviewing the year's progress in civil aviation, Wright noted that with the return of some planes to the airlines, passenger miles flown by scheduled air carriers rose to an estimated all-time high of 2,202,000,000 miles. Plane loads however, increased to more than 90% of capacity, compared with 72% in 1942 and 88% in 1943.

As evidence of a gradual shift toward peacetime flying. Wright cited the termination of the CAA War Training Service Program, which had furnished the Army and Navy with 326,816 partially trained pilots from July 1, 1942 to August 5, 1944. By-products of the conclusion of this program were the sale of about 5,400 surplus aircraft, disposed of by competitive bidding with an average of eight bidders per plane; and a backlog of private business which has kept former CAA Flight Contractors pressed for help and equipment.

Testing Center Established

During the year, CAA established a center for testing Army and Navy aircraft for civil airworthiness, in order to assist manufacturers in determining what changes would be necessary to make such planes suitable for commercial use. This CAA Military-Test Base is now located at Augusta, Georgia.

In the field of technical research, CAA announced assistance in the development of reliable and inexpensive stall-warning devices which are expected to eliminate the No. 1 hazard of private flying; successful testing of aerial photography as a means of choosing airport sites; a scientific fabric tester, and perfection of a new type of radio range station which throws out a course signal in all directions.

Experiments in pilot training were carried forward under CAA guidance at the University of Tennessee, Stephens College, and other institutions, with the aid of magnetic wire recorders and specially installed moving picture cameras, which are used to promote uniformity in rating student pilot performance, and to improve flight instruction methods.

Instruction of young men from the other American republics continued under CAA auspices, with a group of 31 pilots in training at Purdue; 44 traffic control and communications technicians at CAA Regional Headquarters, Kansas City, Mo.; and 66 mechanics at Spartan School of Aeronautics, Tulsa.

Foreign operations of CAA generally expanded, with A. S. Koch appointed Assistant Administrator in charge of CAA foreign activities.

Bailey Acts to Clarify Views On International Air Services

SENATOR Josiah W. Bailey (D., N. C.), chairman of the Senate Commerce Committee and slated to take over the chairmanship of its postwar aviation subcommittee, has issued a formal statement in an attempt to clarify recent published statements pertaining to his views on international air transportation.

His statement follows:

First, I desire that the Congress should pursue a policy intended to make a success of the great structure of air transportation which has been built and which is now in operation. Within our country and without we have done exceedingly well so far.

I do not think we can succeed with a great multitude of companies. I do not like the idea of monopoly as a rule, but when we come to public utilities the rule of monopoly is the American rule. We do not encourage the formation of new shipping companies. We do not encourage the formation of new railroad companies.

I have fear that the domestice airlines would be prevented from succeeding by creating too many lines and look for some standard under which we can keep the number relatively low. It is for this reason, and not through any antipathy to railroads or steamship companies that I have tended to take the view that we should discourage the steamship companies and the railroad companies from entering into air transportation. We cannot make a success of domestic air transportation if the railroads enter into air transportation with them. There will be too much competition and there will not be enough business to go around. The domestic air companies have done well and I think we should give them the benefit of our doubt in this matter.

Commends Pan American

As for the foreign field, I am sure that all will agree that the Pan American System has proved a brilliant and most serviceable success. It is recognized that for a long time it was the only American company occupying the field of trans-oceanic transportation from our shores.

At times I have tended to think that we could afford to create one great company, but it would not be the Pan American nor would it be controlled by the Pan American. One great company having control of trans-oceanic transportation so far as this country is concerned, would necessarily be under the absolute control of our government and might become an arm of the government. Certainly I would not support any one company proposition unless it shall be under the control of the State, War, Navy and Commerce Departments, and under such control it might well become subject to government ownership. If we can prevent this by calling out and giving routes to one or two or more companies, I would be inclined favorably to consider the proposition. I would do this because I wish to avoid government ownership.

I have really not reached a definite conclusion on this subject. So far as my conclusions are definite I am opposed to government ownership and to any policy that would make for government ownership. Moreover I am opposed to such competition either at home or abroad as would break down the business. We must have in any view something in the nature of a monopoly and therefore we must have strict controls, and by strict controls I mean controls proceeding from the government itself and operating in the interest of the public and not in the interest of private companies.

I do not look with favor upon opening up the field at home or abroad generally, as I know this would bring us into a situation which would tend to destroy the great structure already erected.

I have made a rule since I have been in Congress of not making public pledges that would tie my hands or prevent me from considering any proposition on its merits. This statement is not to be interpreted as a pledge, but only as a statement tending to clarify my position for the press. Very probably in the coming year we shall have to deal with the whole problem, domestic and foreign—and so far as I am concerned I intend to deal with it with an open mind with a view to doing the best thing. The statements I have given herein above indicate the trend of my thinking.

President's Letter To Bland Wins OK Of Air Transport

The air transport industry feels strongly that the policy enunciated by President Roosevelt in a recent letter to Rep. Schuyler O. Bland (D. Va.), in which the President expressed opposition to one form of transportation controlling another, is correct, Col. Edgar S. Gorrell, president of the Air Transport Association, believes. Rep. Bland is chairman of the House Merchant Marine and Fisheries Committee.

"It is the policy embodied in the law today, and it has been the policy of Congress since the passage of the Panama Canal Act in 1912," Gorrell stated. "That same policy was repeated in the Motor Carrier Act of 1935 and in the Civil Aeronautics Act of 1938. Under this policy the U. S. was able to build up the best air transport industry in the world, and to accumulate the equipment and experience in air transport operations, which have served to prevent the current war from becoming a conflict of indefinite duration."

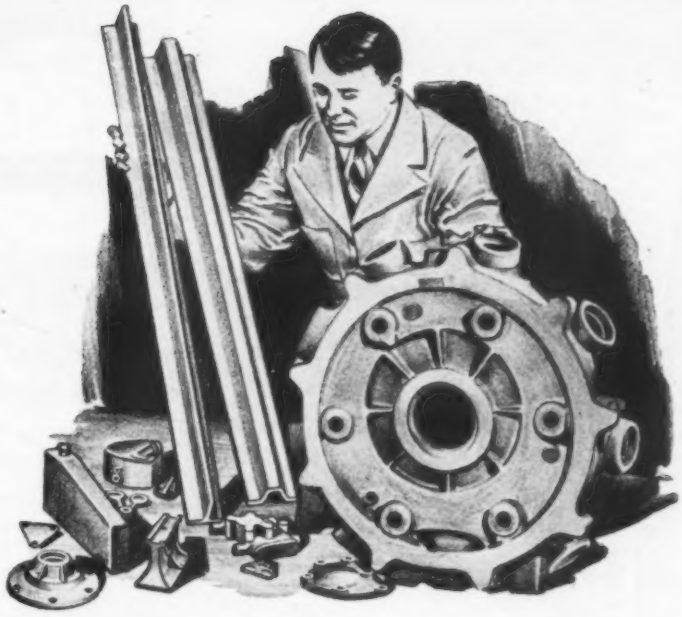
Gorrell pointed out that the taxpayer contributes large sums annually in subsidizing the construction and operation of a merchant marine by private shipping companies. The taxpayer subsidizes them for the purpose of maintaining and actually operating a fleet of ships, adequate to the commerce of the United States, and available for service of the armed forces of this country in time of war.

"That means the provision and operation of shipping," he declared. "If the merchant marine operators are permitted to take to the air, and offer air service in place of shipping services—as several of them propose to do if given that right—to the degree they do this in either passenger or freight services, they will fail to provide and operate shipping of the types which this war has shown are required in the national defense. Such a policy obviously will not provide an adequate merchant marine—unless expected profits from overseas airline operation are realized and diverted to the subsidization of the merchant marine, rather than the up-building of a strong overseas air transport system."

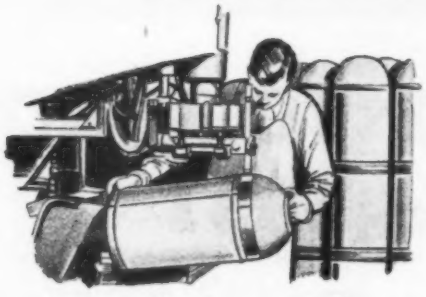
Comdr. Douglas Gets Award— The Eleventh Naval District Coast Guard Auxiliary, of which Donald W. Douglas, president of Douglas Aircraft Co., is commander, recently received the Coast Guard Security Shield of Honor for "outstanding contributions to the Coast Guard port security program." Douglas (right) is shown receiving the award from Capt. W. F. Towle, USCG, at ceremony in Los Angeles.

Four-Place Taylorcraft — The new Model 15 family plane brought out by the Taylorcraft Aviation Corp., Alliance, Ohio, has two doors, providing easy access to both front and rear seats. It has a 125 h.p. engine and is expected to sell for around $4,000.

Magnesium alloys are fabricated and joined by all common methods



and Dow's complete fabrication plants are always ready to work with you



Dowmetal Magnesium brings you its incomparable lightness—without equal among structural metals—in the full range of common fabrication methods.

The fruits of more than a quarter-century of Dow engineering and fabrication experience are ready at hand to translate your ideas into new, weight-saving products of Dowmetal—*the metal of motion*. For in Dow's own shops—and in numerous other plants as well—Dowmetal Magnesium Alloys, with their high strength-weight ratio, show full versatility in sand, permanent mold and die casting; sheet, plate and strip rolling; rod, bar, tube and special shape extrusion; press and hammer forging—and bending, drawing, pressing, spinning, blanking, punching and shearing.

Likewise Dowmetal is readily joined by all usual procedures—riveting and arc, spot, gas and flash welding.

There is no mystery to magnesium processing techniques: These lightweight alloys call for procedures very similar to those employed with other metals.

Skilled technical advisers await your call at the nearest Dow office, to help work out the best way to use Dowmetal in your own product.

DOWMETAL *magnesium*

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Nonstop overnight sleeper service from New York to London in less than twelve hours using the giant Astraliner, TWA's Skyliner of the future.

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Week-end service to Greenland. In the summer months — a 7-hour flight, leav New York in a TWA Constellation Fri afternoon and returning Monday morni Spend all day Saturday and Sunday in a l of breath-taking beauty and colorful peo — one of the greatest scenic spots of the wor

Ready Now

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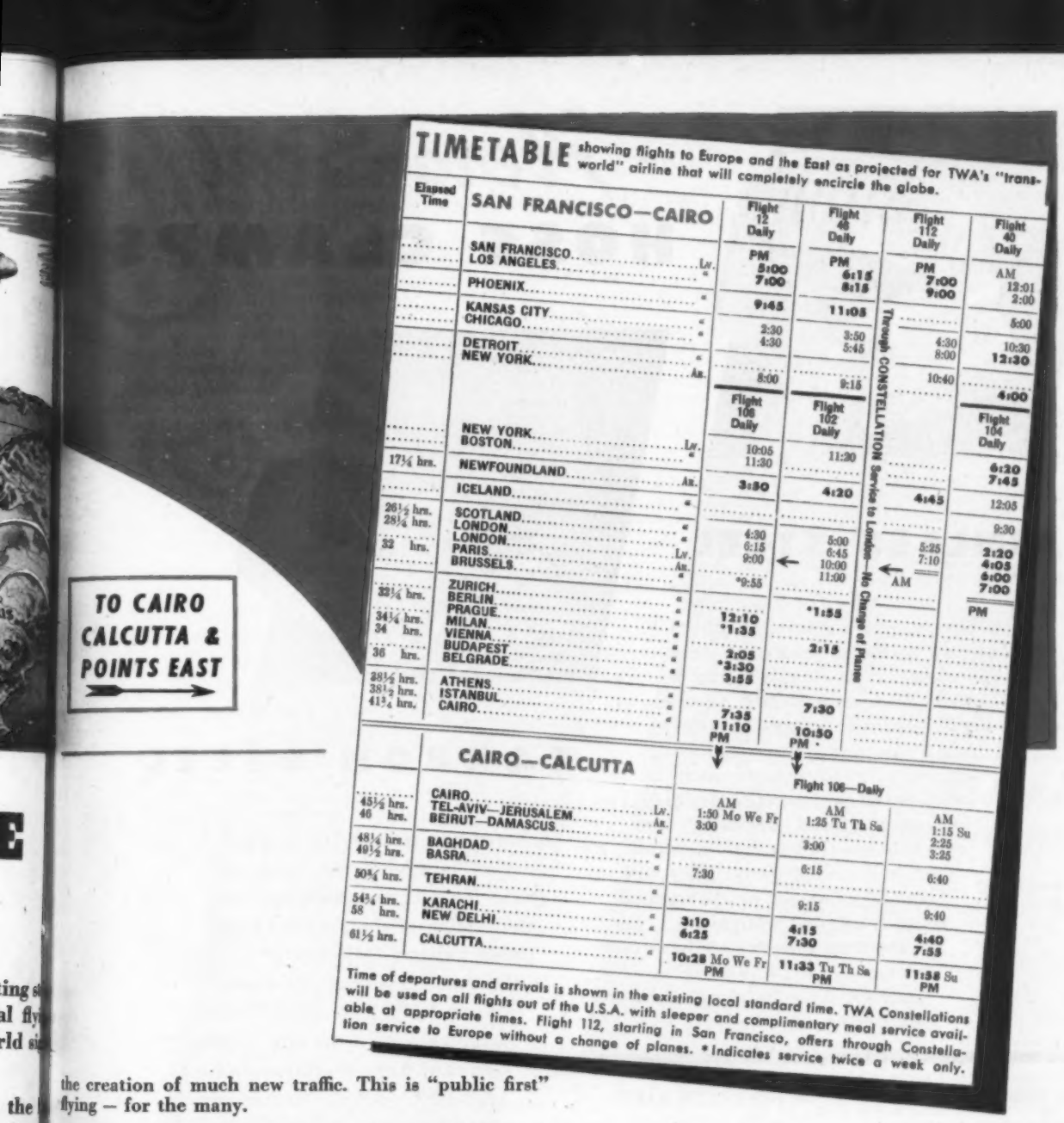
THIS is the kind of *intensive, commercial develo ment* of service that TWA proposes across the Nor Atlantic. It plumbs the full possibilities of every l ounce of foreign travel and foreign trade. It involv



TIMETABLE showing flights to Europe and the East as projected for TWA's "transworld" airline that will completely encircle the globe.

Elapsed Time	SAN FRANCISCO—CAIRO	Flight 12 Daily	Flight 48 Daily	Flight 112 Daily	Flight 40 Daily
	SAN FRANCISCO Lv.	PM 5:00	PM 6:15	PM 7:00	AM 12:01
	LOS ANGELES Ar.	7:00	8:15	9:00	2:00
	PHOENIX	9:45	11:05		5:00
	KANSAS CITY	2:30	3:50	4:30	10:30
	CHICAGO	4:30	5:45	8:00	12:30
	DETROIT			10:40	
	NEW YORK Ar.	8:00	9:15		4:00
		Flight 106 Daily	Flight 102 Daily		Flight 104 Daily
	NEW YORK Lv.	10:05	11:20		6:20
	BOSTON Lv.	11:30			7:45
17¼ hrs.	NEWFOUNDLAND Ar.	3:30	4:20	4:45	12:05
	ICELAND				9:30
26½ hrs.	SCOTLAND				
28¼ hrs.	LONDON	4:30	5:00	5:25	2:20
32 hrs.	LONDON	6:15	6:45	7:10	4:05
	PARIS Lv.	9:00	10:00	AM	6:00
	BRUSSELS Ar.	*9:55	11:00		7:00
32¾ hrs.	ZURICH		*1:55		PM
	BERLIN	12:10			
34¼ hrs.	PRAGUE	*1:35	2:15		
34 hrs.	MILAN	2:05			
	VIENNA	*3:30	7:30		
36 hrs.	BUDAPEST	3:55			
	BELGRADE		10:30 PM		
38½ hrs.	ATHENS	7:35 PM			
38½ hrs.	ISTANBUL	11:10 PM			
41¾ hrs.	CAIRO				

Through CONSTELLATION Service to London—No Change of Planes

TO CAIRO CALCUTTA & POINTS EAST

	CAIRO—CALCUTTA	Flight 106—Daily		
45½ hrs.	CAIRO	AM 1:50 Mo We Fr	AM 1:25 Tu Th Sa	AM 1:15 Su
46 hrs.	TEL-AVIV—JERUSALEM Lv.	3:00	3:00	2:25
	BEIRUT—DAMASCUS Ar.			3:25
48¼ hrs.	BAGHDAD	7:30	6:15	6:40
49½ hrs.	BASRA			
50¾ hrs.	TEHRAN		9:15	9:40
54¾ hrs.	KARACHI	3:10	4:15	4:40
58 hrs.	NEW DELHI	6:25	7:30	7:55
61½ hrs.	CALCUTTA	10:28 Mo We Fr PM	11:33 Tu Th Sa PM	11:58 Su PM

Time of departures and arrivals is shown in the existing local standard time. TWA Constellations will be used on all flights out of the U.S.A. with sleeper and complimentary meal service available at appropriate times. Flight 112, starting in San Francisco, offers through Constellation service to Europe without a change of planes. *Indicates service twice a week only.

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Jack Frye President

Transcontinental & Western Air, Inc.

TWA

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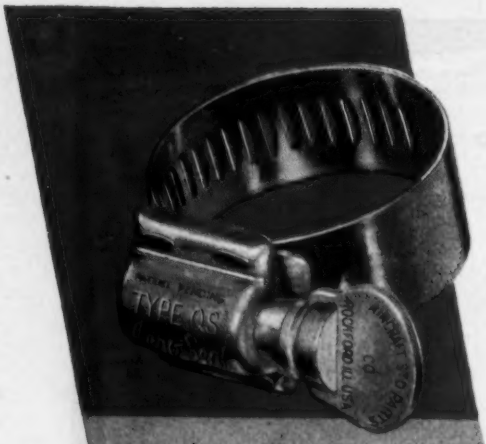

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WE ORIGINATED the AERO-SEAL Worm Drive design and thus offer you the background of longest experience in the manufacture of this new and better type of hose clamp.

U. S. Chamber Urges Surplus Transports Be Reconditioned Before Sale Abroad

THE CHAMBER of Commerce of the United States, through its committee on International Transport, has requested the surplus disposal agencies of the Government to refrain from selling any transport aircraft for use abroad until it has been reconditioned to meet recognized standards of airworthiness and safety.

The Chamber points out that most of these planes have undergone long and severe usage, and will require extensive reconditioning before being fit for commercial operation. If sold on an "as is" basis for use in foreign countries which have no official supervision over safety factors, the Chamber fears that difficulties might result which would react to the disadvantage of the reputation for reliability now enjoyed by American-made aircraft.

The Committee's statement on the airworthiness issue follows:

With the progress of the war and the mounting production of military transport aircraft, increasing quantities of this type of equipment, which is in the least serviceable condition or is otherwise determined by the military or other agencies of our Government to be in excess of or surplus to the war requirements, are being offered for lease or sale to airlines or other commercial users. It will undoubtedly be found that a substantial percentage of these units are unsafe and unairworthy without the expenditure of considerable money for repairs and overhaul. It has been proposed that the surplus, war-weary transport aircraft be sold or leased, domestically and to foreigners, on an "as is, where is" basis with ample allowances made from the fixed, type prices to cover the cost of repair, replacement and conversion.

CAA airworthiness regulations provide sufficient assurance that these surplus or excess transport planes will not be operated domestically in unsafe condition.

Without the safeguard of adequate airworthiness requirements, were this surplus or excess equipment put into operation abroad while in unsafe or unairworthy condition, there would inevitably be serious accidents damaging not alone to the prestige of the original manufacturers and the American aviation industry in general, but would also have serious repercussions on American flag lines operating in and through the affected areas.

It is therefore urged upon all U. S. Government agencies which are or will be concerned with the selling, leasing or export licensing of surplus or excess transport aircraft that such equipment, wherever found, not be turned over to foreign buyers or lessees until it is covered either by a C.A.A. Export Airworthiness Certificate or is otherwise determined to be airworthy according to the standards of the proprietor of the original design.

Dr. Fuller Wins Brewer Trophy for Contributing To Education of Youth

Dr. Edgar Fuller of Washington, D. C., assistant director of the CAA's aviation education program, has been awarded the Frank G. Brewer trophy as the individual making the greatest contribution to the education of American youth during 1944. The award was made Dec. 19 by Vice President Henry A. Wallace at a banquet of the Aero Club of Washington.

Dr. Fuller

Dr. Fuller was chosen for the award by a special committee of the National Aeronautics Association on the basis of his work in assisting state governments to develop aviation education programs. Such curricula, which include actual flight experience, have now been instituted in the school systems of seven states and are planned in many more.

Special record certificates were presented at the same dinner to Igor Sikorsky for helicopter performance and to Col. C. A. Peterson and Lt. Col. Jack H. Carter, AAF pilots who hold West-East transcontinental speed records.

The trophy was endowed last year by Frank C. Brewer, a Birmingham, Ala., businessman, in honor of his two sons serving in the armed forces overseas. He also has set up two other trophies to be awarded on the same grounds in his native city and state. Recipient of the 1943 trophy was the Civil Aeronautics Administration for its achievement in youth education through the Civilian Pilot Training, War Training Service, and Pre-Flight Aeronautics Programs.

Dr. Fuller joined CAA in March, 1942, and has worked in each of the 48 states on the organization of various phases of aviation education in elementary and secondary schools as well as in colleges.

AAF Forms Defense Unit; Beebe Commanding General

The Army Air Forces last fortnight established a Continental Air Forces headquarters which will be responsible for the air defense of the United States. Headquarters are at Camp Springs, Md.

The new organization will take over operational functions of the AAF headquarters in the War Department, but the latter will continue to handle "higher-level policies and planning."

Standardization of British, American Parts Expected to Carry Over to Peacetime

STANDARDIZATION of parts, materials and practices in British and American aircraft manufacture is proceeding at a heartening pace, according to a group of American industry technicians who recently returned from a five-weeks' tour of British aviation facilities.

While this standardization is being promoted largely as a war measure, the American technicians are enthusiastic about its carry-over value into the field of peacetime commercial air transportation operations. With Britain and the U. S. now laying out international air routes, the time will soon come when the planes of both nations as well as English commonwealth countries will be operating far from home fields, they say.

Working on the theory that anything which increases the general utility of the airplane will be good for aviation in general, the technicians of both countries have reached unanimity of thought on standardization of many parts and material which will permit interchangeability. Design and production is already being channeled in line with this thinking, it was stated. The U. S. mission plans to make a detailed report to the industry on the technical phase of their trip.

The value of standardized service attachments with reference to air conditioning, battery plugs, fuel connections, lubrication fittings and propellers was discussed as items which will figure prominently in the need for interchangeability when international air transportation reaches the proportions which are being claimed for it.

Elaborating on their findings with regard to standardization in Britain, the American engineers pointed out that in some cases, due to existing war conditions, British practise involved design and weight penalties. Control by the Ministry of Aircraft Production over the allocation of raw and finished materials and manufacturing equipment is used to restrict allocations to approved articles of manufacture. It was emphasized, however, that this policy was due primarily to the shortage of engineering manpower.

All of the members commented on the preoccupation of the British industry with war production. Under almost daily fire from robot bombs and rockets, British engineers and the Ministry have felt unable to give much consideration to post-war models for civilian uses, the technicians reported.

Members of the mission included: T. P. Hearne, chairman of the International Standards Project of the National Aircraft Standards Committee of the Aeronautical Chamber and Standards Engineer of the Ryan Aeronautical Co.; Eric Dudley, Curtiss-Wright Corp.; Eugene W. Norris, Director of Technical Services, Aeronautical Chamber; J. D. Redding, Manager, Aeronautical Department, Society of Automotive Engineers; L. D. Bonham, Materials and Processes Department Manager, Lockheed Aircraft Corp.; Flight Lieut. D. G. Moffit, RAF, of the British Air Commission; Gustav Carvelli, Standards Engineer, Wright Aeronautical Corp.; and Lieut. Col. G. R. Gaillard, AAF, representing the Working Committee of the Army-Navy Aeronautical Board.

California's First Air Conference

Airport of Future to be Smaller, Not Expanded, Says Lockheed VP

MORE than 200 aviation leaders, mayors of California cities, and heads of chambers of commerce dug into pressing state-wide questions of airports, taxation and legislation at the state's First Aviation Conference last month.

The conference was held at the Hollywood-Roosevelt Hotel. A resolution was adopted making it an annual affair, but hereafter, representatives from the aviation industry, civic and industrial groups in the 11 Western states will be invited to participate. Glenn B. Eastburn, manager of the Los Angeles Chamber of Commerce transportation department, was elected chairman for the 1945 meeting, which will be called the Western Aviation Conference.

Suggestions advanced at the conference were referred for action to the newly created California Council of the National Aeronautic Association, which will study proposals and press for legislative action where it is deemed feasible. The Council will offer services as an information clearing house and coordinating body.

During the two-day conference, at which Theodore C. Coleman, vice president of Northrop Aircraft and head of the Los Angeles chamber's aviation committee, was chairman, the group heard two aviation experts discount the theory of mammoth airports for postwar commercial aviation.

Hall L. Hibbard, vice president and chief engineer of Lockheed Aircraft Company, said that technological improvements will tend to reduce airport dimensions of the future, and that performance figures now available explode the theory that huge airports are necessary.

Improvements listed included the reversible pitch propeller; MacLaren Landing Gear; several methods to assist takeoff; development of a practical jet propulsion engine and boundary layer control—the latter a development which shows possibilities of giving the wing three times the lift of present wing designs.

Jet engines with propellers will be used commercially within four years, Hibbard predicted, and added that airport lengths used in present CAA regulations will be perfectly satisfactory for commercial jet planes.

He pointed out that new CAA regulations present the basis for overall planning which, used as a design yardstick, will greatly influence both airplane performance and airport facilities. He said airports must be designed for typical airplanes of three classifications—the small, twinengine feeder type, "such as the Saturn"; the medium-sized four-engine transcontinental such as the Constellation and the large four-engine transoceanic type of 200,000 pounds now on the drawing boards.

Cites Air Regulations

Civil air regulations for airports to handle these three classifications require, at sea level, 4,000 ft. runways for Feeder type; 5,000 ft. for transcontinental and 6,000 for transoceanic. Corresponding adjustments for 5,000 ft. altitude would aid from 1,000 ft. to feeder runways to 2,000 ft, for transoceanic runways, he observed.

Touching briefly on private plane requirements, Hibbard said he feels landing strips are an interim development, suitable for the next 10 to 15 years. After that time, he predicts, the helicopter will come into its own. It will be inexpensive, fool-proof, and capable of carrying at least five passengers at more than 250 mph, he anticipates. Landing strips would then be important only as parking facilities, he believes.

Edgar N. Smith, CAA urban planning consultant, pointed out that constant enlarging of an airport doesn't necessarily increase its capacity for handling planes.

"An airport can become too big to be efficient", he said. "It can be more efficient and economical to acquire several sites and in the future build medium size airports to handle increased capacity."

He described an adequate airport as one with capacity for 100 planes per day, covering 100 to 120 acres, and costing $250,000.

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Annual U.S. Plane Sales of 1¼ Billion Foreseen by Burden

William A. M. Burden, assistant secretary of commerce for air, lists possible annual sales of U. S. aircraft within five years after the war at a total of $1,270,000,000 in an article entitled, "Postwar Status of the Aircraft Industry," published in the winter edition of the Harvard Business Review.

Burden breaks down the aircraft market into the following classifications: military, $1,000,000,000; domestic transport, $110,000,000; international transport, $20,000,000; U. S. private, $100,000,000; and exports, $40,000,000.

"Although the shrinkage in aircraft manufacturing will be greater than in almost any industry other than purely ordnance industries . . . the outlook is not so uniformly black as many would have us believe," Burden wrote. He predicted that unless America was blind to the lessons of history, it would maintain an infinitely stronger air force after the war than before, that military aircraft would require an extensive manufacturing industry and that obsolescence in transport categories would help to create a market of tens of millions of dollars a year.

"The private flying market will soon equal the transport market in importance and within 10 years after the war will probably far exceed it," he wrote.

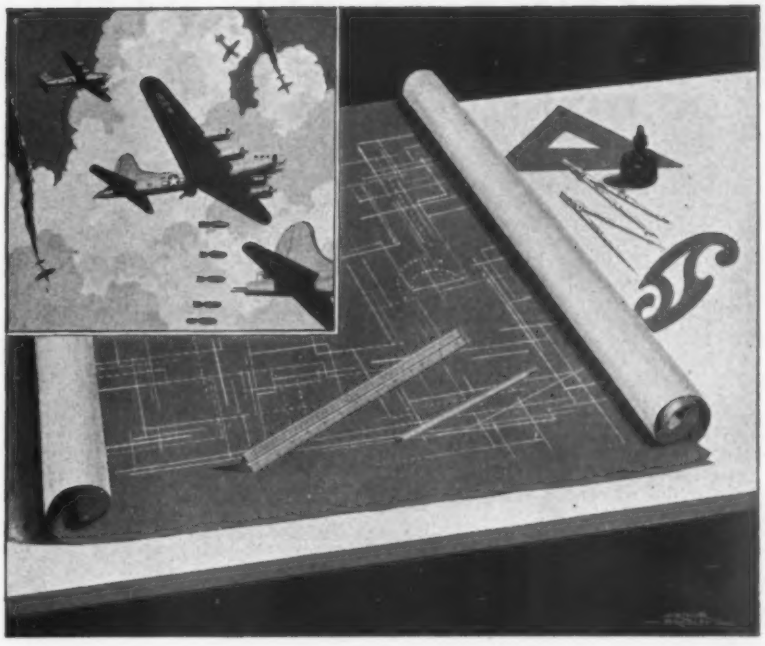
Transport Outlook 'Clearer'

Burden feels that the outlook for the transport industry is considerably clearer than the manufacturing industry. He believes that improved service, increased safety, and decreased rates will assure a sharp growth over pre-war air travel.

"Conservative authorities," he wrote, "expect that the volume of passenger traffic will be four times what it was in 1941, within five years after the close of hostilities, and that 10 years after the war it may be doubled again. In other words, the 1941 revenues, domestic and international, which totaled $135,000,000 might be expected to increase to about $540,000,000 by the first five years after the war."

"In short there is every reason to believe that the postwar aircraft industry as a whole will be a far from insignificant factor in the American economy," Burden states. He feels that the manufacturing and transport branches together would require employment of some 346,000 persons, a figure which would be swelled greatly by the employment in miscellaneous aeronautical activities such as servicing, training, airport operations and the like.

"The influence of aviation on other industries over the short term is likely to be less than generally predicted. The author can see little hope that the expansion of the aviation industry (in relation to its prewar size), during the first three to five years after the war, great though it seems to be, will be sufficient to have a really major effect on our national economy."



Planning for Peacetime Industry *NOW*... and Maintaining War Production *100%*

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Fourth Coast-to-Coast Line Formed by NWA Extension

Non-Stop From Chicago to Detroit Given PCA; UAL Gets Detroit Stop

By KENNETH E. ALLEN

THE Civil Aeronautics Board last fortnight created a fourth transcontinental carrier by granting Northwest Airlines an extension of its routes from Milwaukeee to New York, via Detroit, conditioned upon the restriction that service between Milwaukee and New York should be provided only on planes originating and terminating at Minneapolis-St. Paul or points west.

The decision was contained in the Chicago-Milwaukee-New York case (Docket 629 et al), the majority opinion being signed by CAB Members Harllee Branch, Oswald Ryan and Josh Lee. CAB Chairman L. Welch Pogue and Vice-Chairman Edward L. Warner filed strong dissenting and concurring opinions.

The decision also authorized Pennsylvania-Central Airlines to extend its Route 55 from Pittsburgh to New York, subject to the condition that service between those points should be provided on flights originating or terminating at Chicago or Knoxville, Tenn., or points south.

PCA was also authorized to operate non-stop between Chicago and Detroit, eliminating Grand Rapids as an intermediate point. The latter city will continue to receive service on some schedules.

United Air Lines was authorized to serve Detroit as an intermediate stop between New York and Chicago on Route 1, subject to the restriction that Detroit shall be served only on through flights originating or terminating at Denver or points west, and that Detroit and Cleveland shall not be served on the same schedule.

The decision denied the applications of Braniff, Chicago and Southern, Colonial Airlines, and Transcontinental and Western Air. American Airlines' application for consolidation of its Routes 7, 21 and a portion of 23 involved service to Windsor, Ont., thus making it subject to approval by the President. It will be considered in a separate opinion.

Both Pogue and Warner disagreed with the majority opinion relating to the extension of Northwest and PCA to New York. Pogue suggested an outright merger of the two companies to attain the transcontinental route. Warner suggested suitable operating arrangements between the two companies to provide through service.

Duplication Deplored

"Under the majority decision, Northwest will be paralleling PCA from Milwaukee to Detroit and PCA will be paralleling TWA from Pittsburgh to New York, in each case with essentially the same type of service," Pogue wrote.

"I do not believe that the public convenience and necessity require as much duplication of services as is being authorized in these two situations. This is particularly true because of the excellent connecting service at Chicago and the good service already existing between Pittsburgh and New York.

"With this in mind, I had hoped that the Board would defer its decision on the two applications which I am considering here and give Northwest and PCA time to work out some consolidation or merger . . . If the two systems were combined, we would have a fourth strong transcontinental carrier . . . In the event of such a combination, it would seem to me that the public convenience and necessity would require the authorization to the combined companies to render service to New York, presumably via Pittsburgh."

Warner's opinion followed the same general pattern, recognizing the need for "through one-plane service between the Twin Cities and other points on Northwest's system, and Detroit and New York . . .

"I believe that the same end could be accomplished by a really close coordination of the operations of two entirely non-competitive carriers.

"Undoubtedly, there will be more cases of the same sort, justifying more parelleling of routes, from time to time in the future, but a line must be drawn somewhere, and I cannot concur at present in an action which will put four carriers into direct competition for Detroit-New York traffic and a like number for the traffic between New York and Chicago."

Warner held that the junctions of PCA and Northwest at Milwaukee, coupled with the fact that they are non-competing carriers, would enable the carriers to work out arrangements for through operations between points on their respective systems.

"The possibilities of such arrangements

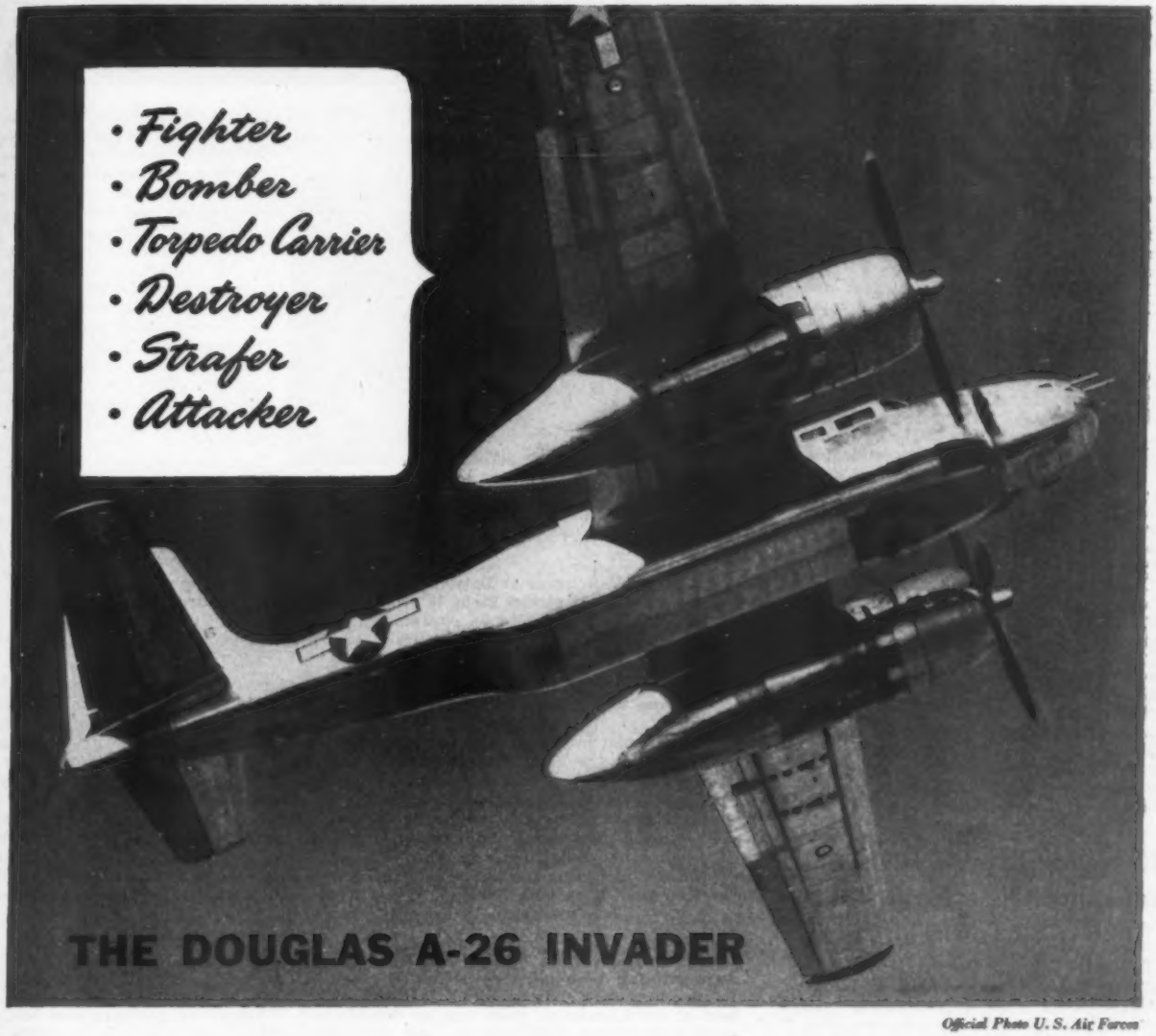
4th Transcontinental Route To Spur Trade to Northwest, N. Y. Port Authority Expects

The Port of New York Authority predicts that the creation of a fourth transcontinental route in the CAB's decision granting Northwest Airlines an extension from Milwaukee to New York via Detroit will result in a greatly increased volume of trade and business between the New Jersey-New York port district and the six northwest border states. The new route cuts 7½ hours from the maximum and two hours from the minimum scheduled westbound flying time from New York to Seattle. Eastbound flying times are reduced at the maximum by 2¼ hours and the minimum by 1¼ hours.

Frank C. Ferguson, chairman of the Port of New York Authority, said creation of the new route would eliminate flight delays and missed connections at Chicago, and would greatly assist the U. S. in meeting competition from foreign flag airlines for air transportation between this country and points in Europe and the Far East. The Port Authority appeared as an intervener in the case in behalf of Northwest's application.

NWA Enters New York, UAL Detroit— Dotted line between Milwaukee and New York shows Northwest Airlines' extension, which gives NWA a coast-to-coast route from Seattle to New York. Dotted lines from Chicago to Detroit and from Pittsburgh to New York trace PCA services. The dotted lines joining Toledo, Detroit, and Youngstown mark United Air Lines' new route to Detroit, an addition to its transcontinental line, all of which is shown.

SEXTUPLE THREAT



Official Photo U. S. Air Forces

Wrapped up in one formidable package are the lessons of five years of attack bombing. The brilliant new Douglas Invader is America's fastest, most versatile bomber. It is designed to carry such an extremely flexible selection of machine guns, cannon, bombs, and fuel that its offensive striking power is adaptable to almost any combat situation.

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are far from having been explored to their limits in the past," Warner wrote. "The very name 'interchange,' used as though it were an all-inclusive description of all that might be attempted, is symbolic of the restrictions that have been tacitly accepted.

"As applied to the present instance the carriers might arrange between themselves, on mutually satisfactory financial terms, that Northwest alone should accomplish this through service, by running certain of its aircraft over PCA's route from Milwaukee or Chicago to New York or Washington; or that PCA might accomplish it, by running certain aircraft through to the Twin Cities or farther . . ."

In the way of consolidating PCA's and Northwest's service, Warner offered these three alternatives:

"1. The aircraft might be turned over to the flight personnel of the carrier over whose regular route they were to be flown, as in interchanges heretofore accomplished;

"2. The flight crews of the original operator might stay with the aircraft to the destination, certain flight personnel being qualified for operating over the route for which the other carrier was certificated;

"3. If the number of schedules so to be operated were substantial, not only flight personnel but dispatching and ground servicing personnel as well might be placed along the route to be flown on the through schedules."

"It is with such possibilities as these in mind that I conclude that the public interest does not actually require that Northwest and PCA both be extended into New York; but that the former's operation should remain as at present, while the latter's should be extended into New York for the sole purpose of operating through schedules to and from Knoxville or points south thereof on Route 55 and through one-plane services between New York and points west of Chicago."

REA's Air Express Division Announces New Tariff Which Affects 728 Towns and Cities

The Air Express Division of Railway Express Agency has announced a new tariff, effective Jan. 15, containing many changes in rates and rules affecting property moved by plane between 728 air express points.

The new express rates will go into effect initially at about 575 airport express cities and associated towns presently maintaining air service. The new rates and rules will apply to all remaining points covered by the tariff as soon as air service has been inaugurated at those points.

Airport offices served exclusively by All American Aviation and Northwest Airlines will benefit by rate reductions amounting to approximately 10 per cent, bringing their charges down to the level covering other airport offices since July, 1943.

Filing Time Change

The time for filing exhibits in the CAB's North Central case (Docket 415 et al) has been extended from Jan. 1 to Feb. 1. Hearing date has been set for March 5 in Washington.

Airline Commentary

From time to time there have been protests in this column about those pesky flies that find their way into the cabins of airline planes . . . We recall writing an "indignation piece" about these non-revenue passengers who always wait until you've just fallen asleep, and then perch on the end of your nose . . . Wayne Parrish, our editor, also has his protest on file . . . So it is particularly gratifying to both of us to be able to print the accompanying picture . . . The pretty girl is Doris Rogers, stewardess on Chicago and Southern Air Lines . . . That bald-headed "passenger" is George Bounds, C&S publicity director . . . Miss Rogers is about to asphyxiate a fly . . . The fly isn't visible—it's evidently sitting in the "grass" on the left of that concrete runway . . . George admits that this isn't the way for stewardesses to shoo flies off passengers' heads, but nevertheless the picture is evidence that C&S is doing something about the fly situation . . .

●

Out of TWA's teletype at Detroit recently came the following message: "Advise if located quart jar pickles flight 70 property passenger forward Dayton passenger agent flight 78 if not already consumed . . ." The things people leave on airplanes shouldn't be left on airplanes! . . .

●

Our annual Christmas card summary is not yet complete but a recapitulation to date indicates some top runners, two from Pan American . . . On the novel and dignified side, Sam Pryor Jr., vice president of Pan American Airways and his family issued a scroll filled solid in Christmas tree design with the names of all of the Pryor friends which number in the hundreds . . . It would take an evening to read them all . . . And we understand that Mrs. Howard Dean, wife of the vice president of PAA, is no end put out by her husband's own personal Xmas greeting which shows very lucidly a Belgian Congo mama feeding her young one in an unusual setting . . . The greeting reads, "Join me in a wee touch, Brother, Put your foot on the rail, Ask the barmaid for a drag, of her Belgian Congo Ale" . . . It seems that in the Congo the mamas carry wooden foot rests for the young 'uns . . . And of course Carl Squier, v.p. of Lockheed, comes forth with his usual clever card but it's less pretentious than in previous years—he's in the hospital recovering from some broken bones, you know . . .

●

The telephone rang here in our office late one Saturday afternoon . . . We answered and a woman very hesitantly asked: "Can you please tell me the difference between a hostess and a stewardess?" . . . So we explained that, to the best of our knowledge, there was no difference . . . However, we have now become curious and would like to know why some airlines call their gals hostesses while some insist on stewardesses . . . Will someone enlighten us? . . .

●

And, speaking of stewardesses (that's what Pan American calls them), we notice that Pan American Airways now has them flying the Alaskan run from Seattle to Juneau, Whitehorse and Fairbanks . . . Some of you stewardesses and/or hostesses in the U. S. might be interested in the winter equipment these gals get . . . "Winter equipment," PAA says, "will consist of customtailored, weather repellant blue coats and parka hoods trimmed in wolverine. They will wear overshoes (mukluks) of fleece-lined black leather" . . . And we can think of places in the States where this equipment would be welcomed . . .

●

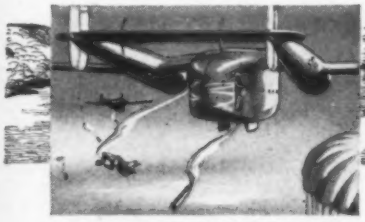
Ken Allen, who covers the Civil Aeronautics Board for this publication, came into our office the other day and said: "Say, I think you ought to give Mrs. Biermann a plug in your column for the job she's doing at the CAB while Ed Slattery is sick" . . . We've been buried in the Stevens Hotel in Chicago for five long weeks at the International Civil Aviation Conference and didn't know about Mrs. Biermann. We therefore had Mr. Allen write the following piece: Mrs. Grace Biermann formerly of the CAB's economic bureau, has been doing a bang-up job pinch-hitting for Ed Slattery, chief of the CAB's press section, during his long illness . . . She has now been assigned permanently to the press section . . . She comes by her newspaper work naturally, having received instruction from her father, an Iowa weekly newspaper publisher . . . (Consider yourself commended, Mrs. Biermann) . . .

ERIC BRAMLEY.

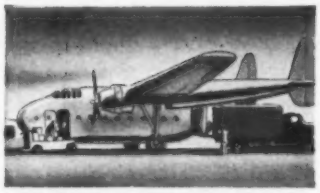
FAIRCHILD ANNOUNCES

The PACKET

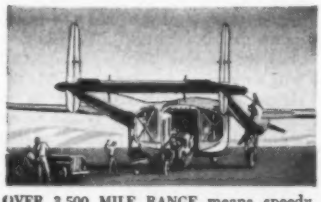
FOR AIR CARGO



THIS FLYING BOXCAR in military operation can carry 42 fully equipped paratroops and deliver them through *two* rear end jump doors at either side of the huge fuselage. Paracans of equipment are released through bomb bay doors beneath the plane.



LOADING MADE EASY, another Packet feature. A huge split door in the stern, a smaller freight door forward simplify loading and unloading of cargo. The cargo floor parallels the ground *at loading truck floor level* eliminating the need for hoisting devices.



OVER 3,500 MILE RANGE means speedy delivery of vitally needed supplies in military operations—cargoes measured, not in pounds, but in *tons*. Today, for the Army; tomorrow, it's yours!

The PACKET is designed *specifically* to transport cargo and troops by air...to carry boxcar loads at air express speed. It was born of a wartime need. The Army presented the problem to Fairchild engineers:

Build a plane that can utilize average airports and fly long or short distances economically—a plane with huge cargo capacity, for men, guns, trucks, ammunition or equipment.

Such a plane is The PACKET. It is in the air today, the first of many to undergo rigid flight tests. An all-metal, high-wing monoplane, The PACKET is powered by two 2100-horsepower engines. It is designed to operate with the simplicity and economy of twin-engine airplanes.

Fairchild engineering experience has given The PACKET another invaluable quality. While today it can carry the weapons of war, tomorrow, with but minor modification, it can transport the goods of peacetime commerce.

It has the characteristic inherent in all Fairchild products—the "touch of tomorrow in the planes of today."

BUY U. S. WAR BONDS AND STAMPS

Fairchild Aircraft

Division of Fairchild Engine & Airplane Corporation, Hagerstown, Maryland

Department of Justice Brief Hits 5 Steamship Companies

United Fruit, Waterman, Grace, Moore-McCorm'k, A.G. & W.I. are Involved

RECOMMENDATION that the applications of the five steamship companies involved in the CAB's Latin American case (Docket 525 et al) be denied and that competition be provided both Pan American Airways and Pan American-Grace Airways in international operations is contained in the Department of Justice brief filed in the case.

"The prohibitions established by law and public policy in order to prevent the control of air transportation by surface carriers engaged in competing modes of transportation must not be ignored or neglected in this proceeding", the Justice Department's brief states.

"They are particularly pertinent and most strikingly call for the careful consideration of this Board (CAB), in view of the powerful position enjoyed in the transportation picture by the steamship companies involved.

"If for any reason the applicable restrictions of law were disregarded or relaxed in this case, a momentous step would have been taken toward permitting all surface carriers to engage in air transportation. Once the door is opened, the breach becomes gradually greater; there is no turning back; the encroachment grows and continually spreads; until ultimately the way is open for any surface carrier to control and operate airlines . . ."

The five steamship companies involved are United Fruit Co., Grace Line, Inc., Waterman Steamship Corp., Moore-McCormack Lines, and Atlantic, Gulf and West Indies Steamship Co.

One Issue In Particular

The Justice Department took particular issue with a contention by some of the steamship applicants that they did not come under the section of the Civil Aeronautics Act which prohibits surface carriers from controlling airlines since the steamship companies are engaged in foreign commerce.

"This contention is based upon the fact that Section 408 (of the Civil Aeronautics Act) does not specfically mention carriers engaged in foreign commerce, as well as the fact that such carriers are in competition with foreign carriers and are not subject to regulation under the laws of the United States.

"This contention, as well as the bases thereof, appears to be wholly unjustified and unfounded either on reason or on fact," the Justice Department said, emphasizing that the Civil Aeronautics Act, as well as the antitrust laws, apply to carriers engaged in foreign commerce.

"The operation of both air and steamship services by any of the steamship applicants would not only eliminate competition between the two types of transportation, but would also afford such steamship company a competitive advantage over independent air carriers."

With respect to Pan American and Panagra, the Justice Department held that despite their testimony that there is not sufficient traffic to support additional air service in the Latin and South American markets, the CAB should authorize competitive service "if the public convenience and necessity will be served thereby."

W. R. Grace & Co., an intervener in the case, asserts in its brief that the CAB recommend to the President that he require or request Panagra to file an application for an extension of its routes from Balbao to New York, pointing out that Pan American has prevented Grace from doing this. Panagra is owned equally by Grace and Pan American.

CAB Calendar

Jan. 9—Oral argument, American Export Airlines-American Airlines acquisition (Dockets 1345, 1346).

Jan. 8—Hearing on consolidation of Northeast Airlines' route. (Docket 1607 et al). (Tentative).

Jan. 10—Hearing on South Atlantic route applications. (Docket 1171 et al) (Tentative).

Jan. 11—Prehearing conference on Braniff Airways' application to lift restrictions on Route 15. (Docket 1225).

Jan. 23—Oral argument in Colonial Airlines mail pay case. (Docket 842).

Jan. 31—Hearing on Oklahoma-Texas applications in Fort Worth. (Docket 337 et al).

Feb. 11—Hearing on Pacific case (Docket 547 et al). (Tentative).

Feb. 12—Hearing on non-scheduled investigation. (Docket 1501).

Mar. 5—Hearing on North Central case (Docket 415 et al). (Tentative).

Mar. 12—Hearing on National Airlines mail rate (Docket 824).

Justice Dept. Urges CAB Denial of Moore-McCormack Application

Position As Outlined in Latin American Case Reiterated in Brief

THE Department of Justice has filed a brief in the CAB's North Atlantic case (Docket 855 et al) calling on the CAB to deny the application of Moore-McCormack Lines on the grounds that the steamship operator "cannot use aircraft to public advantage in its operations" and that competition would be restrained.

The brief reiterated the Department's position with respect to steamship operators as outlined in a brief filed in the Latin American case (Docket 525 et al). The North Atlantic brief mentioned only Moore-McCormack.

"The point which has been stressed by all of the steamship applicants in this and other proceedings is the desire to protect the steamship company from the full effect of air competition. Moore-McCormack's policy witness also stated that he felt this 'one way air—one way sea service' was necessary for the protection of steamship operations.

"One reason the scheme is attractive to steamship applicants is that it saves passengers for the steamship traffic. It is not a furtherance of air transportation; it is rather a restraint upon the conduct of an effective air transport system."

With respect to Moore-McCormack's argument that a new type of traffic would be generated if the steamship company were certificated to provide a sea-air service, the brief declared:

"This service will exist with the return of ships to the routes over which they previously operated, and the certification of an air carrier or carriers over the route. The public will enjoy the same advantages in travel and air transportation will not be tied to the apron strings of the merchant marine."

The brief characterized as "questionable" the benefits to be derived for American air transportation should Moore-McCormack enter into conference agreements or pooling arrangements with foreign air carriers with respect to rates.

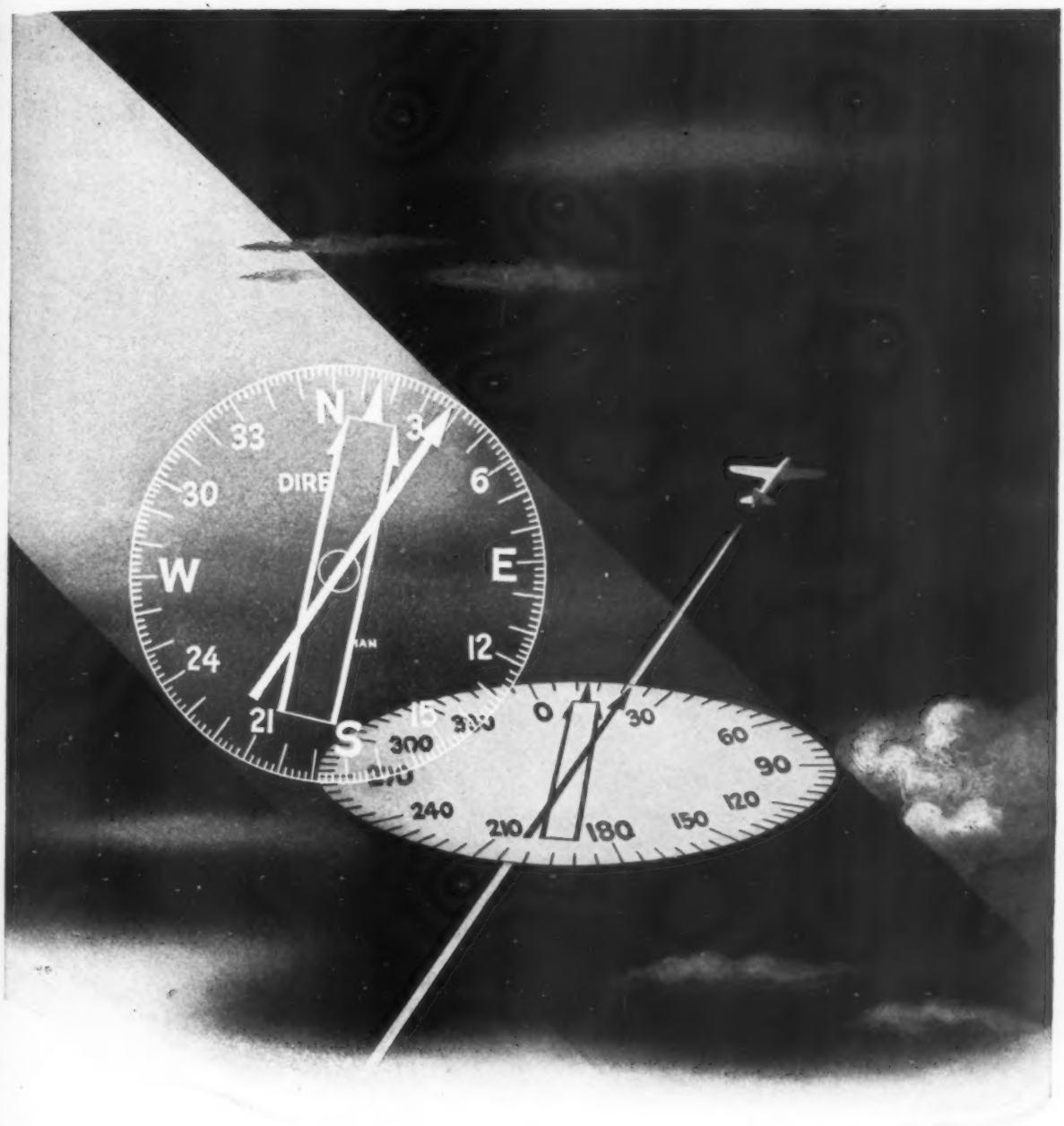
Asserting that "no finding of public advantage is warranted by the evidence," the brief asserts that the evidence which Moore-McCormack offered in support of its application "does not indicate that the air service proposed is supplementary, auxiliary or incidental to the steamship operations."

The brief contended that Moore-McCormack's proposed air operations over its southern route "are in no way even remotely related to past steamship operations," and that the proposed northern route parallels the route of American Scantic Line and "could be classed as merely alternative service."

"The operation from Leningrad to Basra would seem to be merely an after-thought and entirely unrelated in any way to previous steam operations.

"It should be noted that applicant has stated that it is in a position to conduct air service at a lower cost than independent airlines because of its ability to distribute some of its costs over its combined ship and air service to the Baltic, Scandinavian and Russian area. The growth of an air transportation system will never be progressive, healthy or self-sustaining if subordinated to marine interests and relegated to a minor role where it must be fed by distributing its cost of operation to services conducted by steamer.

"Air transportation, if conducted by this applicant, would result in a detriment rather than an advantage to the public."



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AA Opposes Granting More Air Routes in New England

Damon Says Presently Authorized Service Should Be Developed

AMERICAN AIRLINES' strong opposition to the certification of any new routes and services in New England until presently authorized service by the carriers is fully developed, was voiced by Ralph S. Damon, vice-president and general manager, in the closing session of the 12-day hearing given 15 applicants and more than a dozen interveners in the New England hearing at Boston.

As the sessions concluded, speeded up by one night meeting and early morning meetings, Examiner Barron Fredricks announced briefs, not to exceed 50 pages, were to be submitted before March 1, and that some delayed exhibits would be received if offered before Dec. 30.

Damon's testimony was highlighted by some searching questions from Harold L. Russell, counsel for Eastern Air Lines. American's general manager asserted that new service offered by Eastern and Colonial Airlines would duplicate in considerable measure some of the present service, and he expressed the opinion that "the purpose of these applications is diversion of traffic from existing carriers," so that "therefore American Airlines is opposed to their certification."

Warns of Direct Competition

He warned that the applications of some of the companies seeking "so-called local or feeder service" paralleled trunk air lines in such a manner that if the feeder applicants were to develop non-stop schedules, these would be in direct competition with the present trunk lines between some points.

"American does not believe it to be sound to have feeders parallel trunk carriers," he said.

Turning to the request of Colonial for New England routes, and the petition of Eastern for new stops, he asserted that "the amount of service in southern New England has been already augmented by additional certificates, some of them not yet inaugurated," and that Colonial's proposals were "chiefly an overlay of American Airlines service."

He said the Bedford Airport, outside Boston, which Colonial has requested as a stop, has been a tentative American alternate landing since Aug. 11, 1942, when American made a contract with the State of Massachusetts covering the right of the carrier to use it as a bad weather alternative. He said American has been paying a stand-by change for such use ever since, but Army restrictions have continued to make it undesirable.

He said American had asked for a Brockton stop before Eastern's petition was filed, and that American had been denied this and other landings which are named in some of the pending applications.

Russell's cross examination went into both the Boston-New York case and the San Francisco-Los Angeles case, in which he said "American was not handicapped by any consistency," and that his questions were designed "to give American a chance to explain."

Damon denied, in response to Russell's queries, that American had taken one stand regarding parallel competition in the Boston-New York case, changed it in the San Francisco-Los Angeles proceeding, and now wishes to change back again.

Ray Hylan, president of Hylan Flying Service, testified to plans for economical routes between Buffalo and other points to Boston, and insisted the firm does not "propose to run a trunk line system."

There was searching cross examination into the organization and structure of Norseman Air Transport, organized by Connecticut businessmen and nearly 50 military airmen. Testimony brought out the fact that a request for intrastate routes had been made of the Massachusetts Aeronautics Commission, but Jerome E. Respess, Hartford engineering executive, said Norseman "definitely will not run an intrastate airline."

During the presentation of the case of Putnam Airlines, Albert Beitel, counsel, served notice that he did not expect to have to prove public convenience and necessity "to the same extent" as other petitioners because mail rights were not sought.

One of the tense moments came when Hamilton O. Hale, for American, protested "we are trying the New York-Boston cases all over again," and accused Eastern Air Lines of "highly unfair" procedure. Hale sought to have E. Smythe Gambrell, Eastern attorney, state whether EAL's "prayer for relief" from the board was for the removal of restrictions which require its Boston flights to originate and terminate at least as far south as Charleston, W. Va., or Richmond, Va. Gambrell stood pat.

"It is highly unfair of Eastern to refuse to state its position," Hale stormed, adding that counsel for TWA and United were not present, and that "if they knew this thing were coming up, they would be here opposing it. We are entitled to know whether lifting the restriction is an issue."

Examiner Fredricks ruled the applicants could only assume Eastern would press for the best possible relief.

Backing up Eastern's request for stops at Hartford, Brockton, New Haven, Providence and Stamford-Norwalk, Paul H. Brattain, first vice-president, said they "represent the most important concentrations of population, industry and commerce in New England outside of Boston," and that EAL was willing also to serve other points in New England.

Brattain characterized Colonial's request to serve Bedford, Boston suburb, as "merely a none too subtle attempt to become a fourth carrier competing for the New York-Boston traffic."

Questioning of J. Burleigh Cheney, president of Skyway Corp. of Providence, aspirant for helicopter routes, developed a

UAL Flew 5 Million Miles In Alaska ATC Operations

United Air Lines concluded its Alaskan operations for the AAF's Air Transport Command with a record of more than 5,200,000 miles flown, approximately 20,000,000,000 pound-miles flown, the transportation of 33,500 military passengers, almost 6,000,000 pounds of military cargo and more than 2,500,000 pounds of mail flown. No major mishap or injury was recorded during the operation, which began in May, 1942.

Pheasants by Air— The piece de resistance at a recent luncheon of the Los Angeles Advertising Club was pheasant, flown from Huron, South Dakota, via Western Air Lines. Ted Cate, advertising manager for Western, and Gus Waser, supervising chef for the Biltmore Hotel in L. A., are shown with three of the birds.

deadlock for a time when he declined to name persons he expected to be financial backers.

After an agreement of counsel, Cheney testified 100 shares of Class A stock were held by Roger L. Putnam, former mayor of Springfield, Mass., and that others interested were Horace L. Weller, Charles M. Sears, Jr., and H. Lloyd Rooney.

These three, Cheney said, had "divorced themselves from a surface carrier." He testified also that the Short Line, Inc., a bus company, had been interested in the Skyway project, and that $35,000 to $45,000 had been spent in preparatory work.

Protest from Skyway

At a time when counsel were inquiring into the background of Skyway, Clarence Peterson, for the company, protested: "We will cooperate to the fullest extent; we have nothing to conceal." He asked that he be permitted to rest on what exhibits had been offered. Atty. John B. Ford, for Northeast, retorted with three motions to strike out parts of Cheney's cross examination on the basis of his refusal to answer cross examination, and Public Counsel Philip Schleit asked whether prospective Skyway backers are connected with surface carriers, asserting "all applicants are entitled to know."

Assertions that the late Elmer W. Wiggins, founder of E. W. Wiggins Airways, Inc., of Norwood, Mass., "poured money" into the fixed base operation and was interested in aviation "only as a hobby," created another storm.

Joseph Garside, president, declared that "Wiggins worked from early morning until late at night to further the cause of aviation," did a "wonderful job for the U. S. Government to help with the war training effort and killed himself doing it." Wiggins Airways, largest fixed base operator in the country before the war, presented elaborate exhibits to back its application for nine routes in New England, one touching Albany.

Final witness was Paul E. Battilana, assistant to the vice-president of Edo Floats, who testified amphibious floats, such as Norseman Air Transport expects to use, had been built, tested, and found "practical and safe" on sizes up to C-47 equipment.

U. S. Pilot Flies Non-Stop From South to North Chile; Record Hailed as Milestone

An American pilot has made a record flight from the world's southernmost city to the northern boundary of Chile, marking an important milestone in that country's military aviation, the War Department reports.

The flight was from Punta Arenas in the Straits of Magellan 2,916 miles to the border city of Africa in slightly less than 16 hours. It was the first time such a feat had been accomplished and the flight was regarded as a significant forward step in shortening distances within the South American nation which stretches for nearly 3,000 miles along the Pacific coast.

The pilot for the flight was Col. Paul T. Hanley, Chief of the U. S. Military Aviation Mission at Santiago, Chile. His co-pilot was Capt. Enrique Flores of the Chilean Air Force.

Signs for 10 Planes— William A. Coulter is shown putting his signature on a contract for 10 four-engine transports as Donald W. Douglas looks on. They were flying over Los Angeles in a C-54 when this picture was taken.

Western Air Lines Buys 10 Four-Engine Planes

Western Air Lines at mid month completed negotiations for the purchase from Douglas Aircraft Co. of five DC-4s and five DC-6s. Purchase price amounted to approximately five million dollars.

Western plans to use the four-engine planes on its newly granted Los Angeles-Denver route and on the Los Angeles-San Francisco division of the California-Canada network.

Western estimates that Los Angeles-Denver DC-4 time will be three hours and 45 minutes and DC-6 time for the route three hours.

William A. Coulter, president of Western, signed the contract with Donald W. Douglas, president of Douglas, aboard a C-54, army prototype of the DC-4, while flying over Los Angeles. The purchase took place 19 years after Western bought the original single-engine Douglas M-2 with which to inaugurate the first commercial air mail service out of Los Angeles.

Thirteen Airlines Reported Ready to Spend 50 Million At San Francisco Airport

Thirteen airlines have agreed to spend more than fifty million dollars for facilities at the San Francisco airport provided the city spends twenty million to provide sites for their terminals, according to a story in the *San Francisco Chronicle*. The story did not specify the 13 airlines, mentioning only Pan American Airways, American Airlines, Matson Steamship Co., and TWA as possible participants.

The *Chronicle* story says Pan American Airways will spend seven million dollars and the "other lines will invest from three million dollars up apiece for hangars, shops and passenger terminals if the bond proposal suggested by the Utilities Commission is offered to the voters and carried."

The Army and Navy are spending 10 million dollars improving the airport now in exchange for title to Treasure Island. The city will soon have a 10,000-foot runway in the direction of the prevailing wind, and will build several 8,000-foot "cross-wind" runways if the bond issue is voted.

Returning Servicemen Get Old Jobs Back At CAL; Same Salary, Too

Continental Air Lines has announced a job preference setup for returning servicemen, under which former employes may return to the airlines with an offer of the same jobs they left, or their equivalent in seniority, status and pay. In the case of veterans making first application for positions with the airline, they will be given preference over non-veteran applicants, other qualifications being equal.

President Robert F. Six said in announcing the plan, that veterans returning to work for the airline can report at any Continental station, and there receive a free pass to Denver to report to the personnel office.

"The veteran's pay will begin the day he arrives in Denver and reports to the personnel office," Six said. "His salary will be set, temporarily, at the salary he was receiving when he left for the service." In the case of jobs having automatic pay increases or merit increases, the veteran's salary will be raised to the appropriate level.

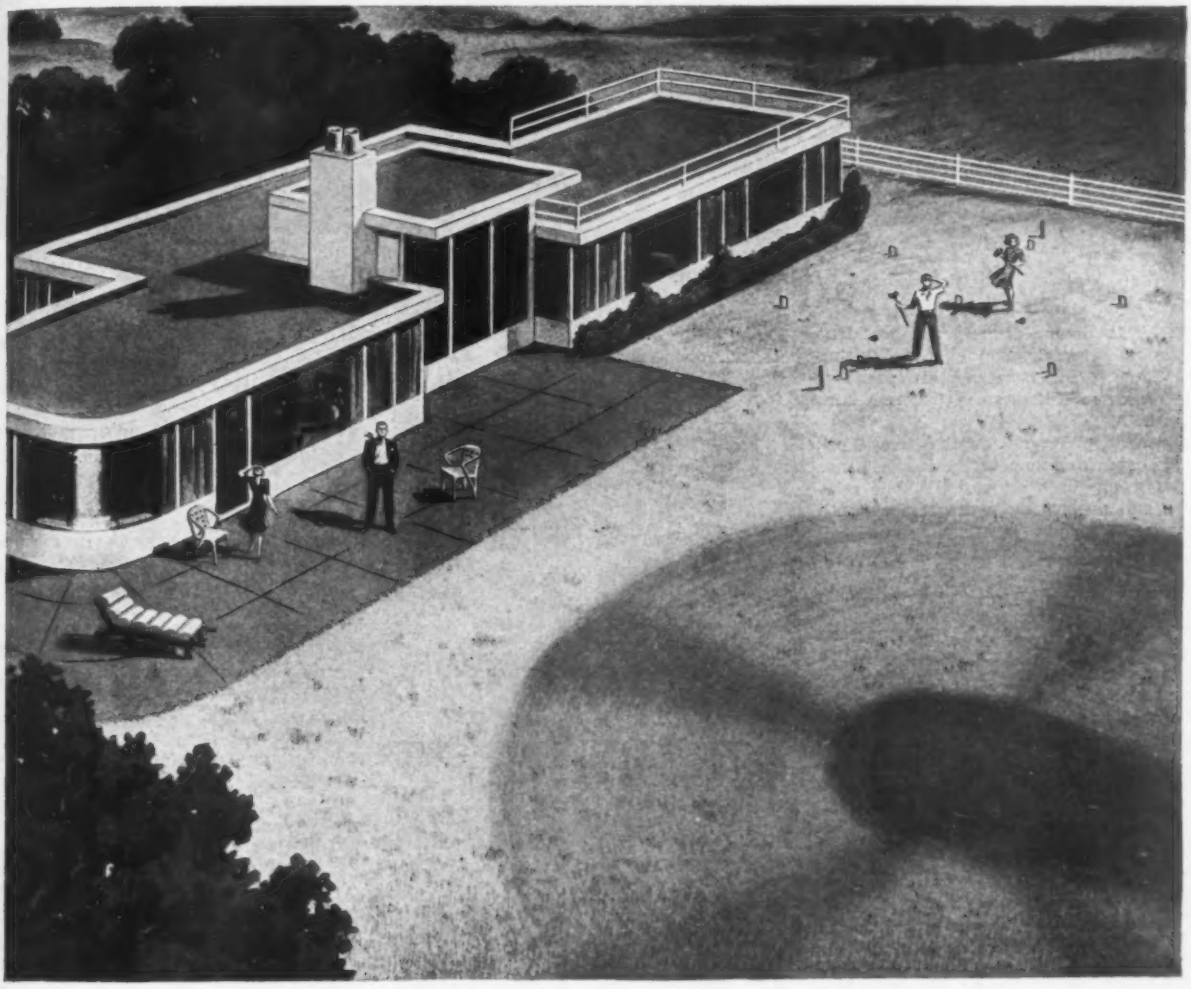
"Should the former employe for physical or psychological reasons be unable to resume his old duties it will be the policy of Continental Air Lines to make every effort to provide him with a job which he is capable of filling," Six said. "The former employe who has acquired new skills or knowledge during his service in the Armed Forces will be placed in a better job as soon as there is an opening."

Atlantic, Gulf, West Indies Lines Files Brief Offering 5-Cents-Per-Mile Service

Atlantic, Gulf and West Indies Steamship Lines has filed a brief in the CAB's Latin American case (Docket 525 et al) offering rates of not over 5c a mile for overseas air transportation without government subsidy. The company seeks to operate air service in connection with its steamship service between New York, Bermuda, and the Caribbean area. Denial of its entry into the air transport field, the company states, will seriously affect its service and its ability to meet foreign competition.

The brief states that it is developing a 78-passenger airplane, which will have two-passenger staterooms, single passenger roomettes, chair accomodations, and a lounge and dining salon. During the several years that this airplane will be under development, the company proposes to use Lockheed Constellations for express services and Curtiss Commandos for supplemental feeder services.

★ NUMBER 14 IN A SERIES OF MESSAGES BY KELLETT AIRCRAFT CORPORATION ★



"SIGN IN THE SKY..."

See that shadow! It is symbolic of a new and different type of aircraft. Rapid progress has been made in helicopter development during the war, under Government sponsorship . . . and the modern helicopter can be expected to play a practical and useful part in the great future of air transportation.

The special flying abilities of the helicopter qualify it for many time-saving peacetime applications . . . augmenting conventional air transport . . . serving and saving in uses beyond present limitations.

So look ahead and look aloft. While all present Kellett facilities are concentrated on military production, the Kellett engineering staff and productive organization are working toward the day when "flying without wings" will take its useful place in tomorrow's skies.

SEND FOR INTERESTING BOOKLET

There may be some questions in your mind about the helicopter . . . its capabilities, possibilities, and its probable post-war services. If so, send for an interesting booklet, "Answering Some Helicopter Questions." Write Kellett Aircraft Corporation, Dept. TC, Upper Darby (Philadelphia), Pa.

KELLETT

OLDEST ROTARY WING AIRCRAFT MANUFACTURING COMPANY

Belden

Baldwin

Executive

H. W. Anderson, formerly vice president of the aviation division of the Whiting Co., Harvey, Ill., has been given executive duties in Honduras with TACA Airways S. A.

Harmon A. Harris, of the New York traffic department of Pan American-Grace Airways, has been appointed public relations and advertising manager for South America.

Traffic

Richard W. Sylvester, formerly special representative for Pan American-Grace Airways at Balboa, Canal Zone, has been appointed traffic manager for South America. **Raymond E. Montgomery** has assumed his duties as special representative at Miami.

MacDonald Bryan, director of public information of National Airlines, has been reelected president of the Florida Publicity Association.

Arthur C. Smith has been appointed cargo traffic supervisor for American Airlines in the Los Angeles district. He was formerly traffic manager of mail-express and freight for Continental Air Lines.

Myrta Sawdey, formerly chief stewardess for United Air Lines at Denver, has been named chief stewardess at San Francisco, succeeding **Violet McNeill,** who is returning to flight duties. **Mary Shick,** formerly chief stewardess at Burbank, has been appointed assistant to Miss Sawdey. She replaces **Ada Brown,** also returning to flight duties. **Jane Nutting,** stewardess at Denver, has been promoted to chief stewardess there, and **Margaret Tolosano,** stewardess at San Francisco, has been named chief stewardess at Burbank.

Harold Clark, formerly head of the reservations department of Pan American Airways in Los Angeles, is the new field sales representative for the airline in the Los Angeles territory, replacing **Jack Ladd,** who recently resigned to organize his own travel agency.

Vet Administration Ruling

The Veterans Administration reports that under terms of a ruling just obtained, the $500 available for tuition for returned veterans under the G.I. Bill of Rights must be apportioned over a school year of 38 weeks. Thus, if aviation courses ran for only 20 weeks, the amount that should be paid under the terms of the Act would be approximately $260, regardless of what the cost of the course was published to be.

Airline Personnel

Benson

Harris

Shick

Tolosano

Sawdey

Nutting

Lindsey

Bray

Los Angeles Number Changed

New and improved telephone service has been installed in the Los Angeles offices of American Aviation Publications. The number has been changed to Trinity 7997, and there now is 24-hour switchboard service in effect for both editorial and advertising departments at 1404-5 Park Central Bldg., 412 West Sixth St.

Montgomery

Evans

Operations

D. C. Evans, assistant to R. L. Smith, operations manager of Northwest Airlines, has been appointed superintendent of stations for the company's eastern region between Chicago and Billings, Mont. He succeeds **R. C. Anderson,** now on special assignment for the company. **Lloyd I. Belden,** veteran Northwest pilot, has been appointed system chief pilot for the company. He succeeds **M. B. Freeburg,** chief pilot for two years, who recently requested his release so as to return to flight duties.

Don. O. Benson has been named superintendent of aircraft engineering for Northwest Airlines. Working under him will be three supervisors—**Ronald E. Pfleiderer,** power plant engineer; **James A. Butcher,** airframe engineer; and **Howard L. Prieve,** flight engineer.

Capt. Lewis C. Lindsey has been named chief pilot for Pan American Airway's Alaska service. A PAA pilot since 1936, he replaces **Chief Pilot S. E. Robbins,** who has been transferred to the airline's San Francisco base

Maintenance

Gordon Wood has been appointed assistant general purchasing agent for United Air Lines at its central maintenance base at Cheyenne, Wyo. **W. F. Kiefer,** of Chicago, will succeed him as shop auditor.

Miscellaneous

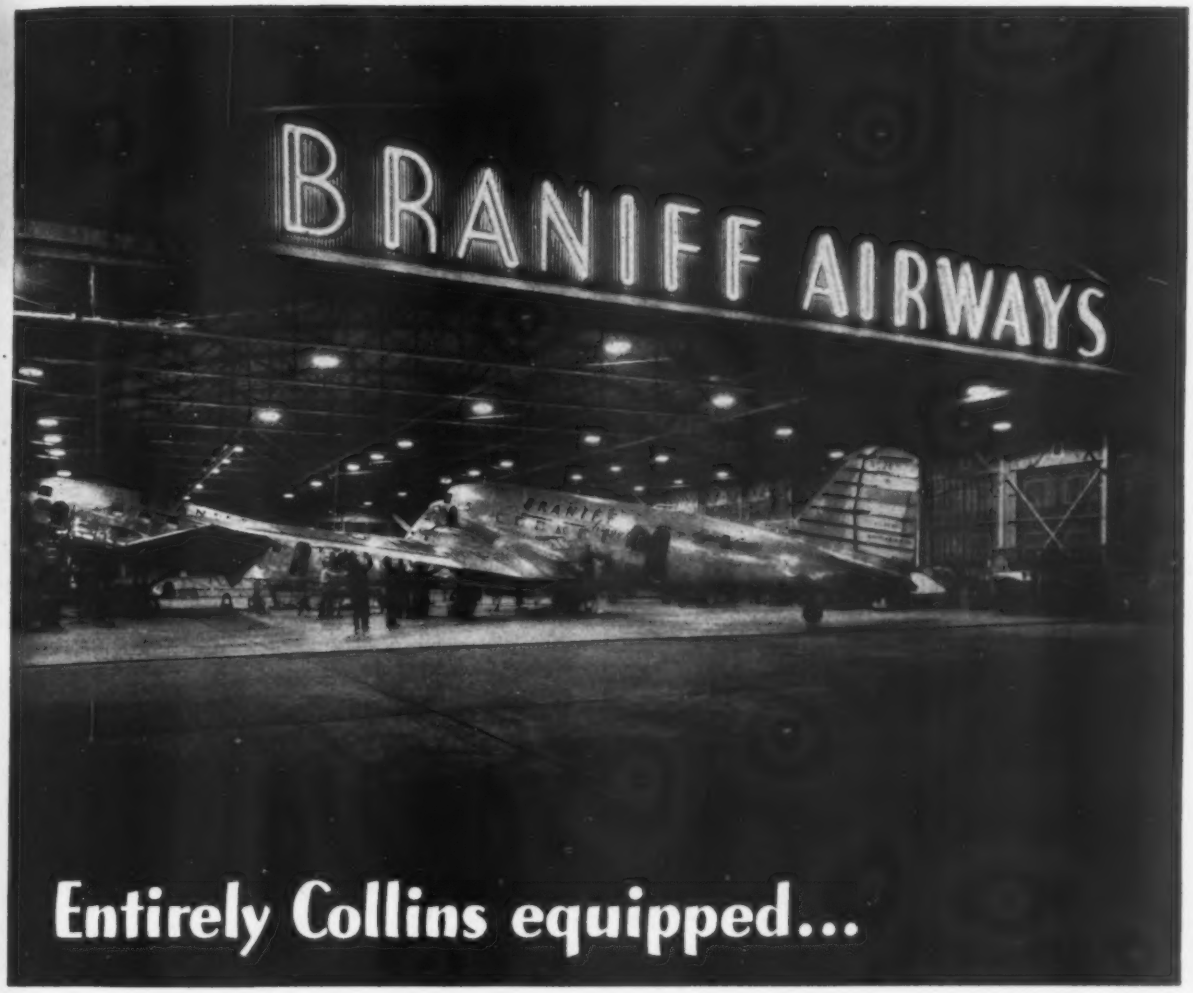
Lt. Col. Benton R. Baldwin, former United Air Lines pilot, holds three major combat decorations for activities in the European theatre.

William J. Bray has been named executive assistant to Vice President J. J. O'Donovan of Pennsylvania-Central Airlines.

John E. Grabow, formerly traveling auditor for United Air Lines, has been named manager of disbursements with headquarters in Chicago.

TWA Makes Fast Run

A scheduled flight from Chicago to New York was made non-stop by a Transcontinental and Western Air DC-3 Dec. 21 in two hours and 57 minutes. The plane, carrying 18 passengers and 1,500 pounds of cargo, averaged 250 mph and at times attained a speed of 300 mph. The crew consisted of Capt. David de Blasio and First Officer Donald Greene, both of Brooklyn.



Entirely Collins equipped...

BRANIFF AIRWAYS, INC. has been using Collins ground transmitters since 1935 and Collins aircraft transmitters since 1937.

It was the first great airline to recognize the superiorities of Collins design, workmanship, and performance, the first to avail itself of the precise, sturdy, reliable Collins Autotune.*

Today Braniff uses Collins multi-channel or Autotune equipment at every point at which it has a radio station, and every ship in its *Super* B *Liner* fleet carries a Collins 17F Autotune aircraft transmitter.

There is a deep satisfaction in having supplied the nerve-system on which Braniff relies in maintaining its magnificent record of safety and operating efficiency.

When Collins turned to war production, it could apply the know-how that came from furnishing communication equipment which met the exacting needs of Braniff and other major airlines. When it returns to civilian design and production, it will add to that know-how the tremendously increased, intensified experience acquired in its services to the Armed Forces. Collins Radio Company, Cedar Rapids, Iowa.

ARMY E NAVY

*The Collins Autotune is a repositioning mechanism which quick-shifts all transmitter or receiver tuning controls simultaneously and with extreme precision to any one of a number of pre-determined frequencies. Patents issued and pending in the USA and other countries.

COLLINS

REG. U. S. PAT. OFF.

United, TWA Vigorously Protest Award of Denver-L.A. to WAL

File Petitions Asking Rehearing, Reargument, and Reconsideration

THE Civil Aeronautics Board's decision awarding the route between Denver and Los Angeles to Western Air Lines drew vigorous petitions last fortnight from United Air Lines and Transcontinental and Western Air asking for rehearing, reargument and reconsideration.

United's petition leaned heavily on the report of Examiner Albert F. Beitel, which had recommended the carrier for the route. The petition noted that Beitel "was not available during the long deliberations which preceded the decision to defend his choice of United as the operator of the new route." Beitel resigned shortly after his report was submitted.

TWA took issue with the CAB on four points in opposing the award of the route to Western, asserting that if the latter carrier is certificated, TWA should be too. The petition stated also that the decision had strengthened the position of United in the western United States, "yet this continued aggrandizement of United's position in the west is not even discussed in the opinion."

United predicated the bulk of its argument for reconsideration on its inability to work out successful interchange of equipment with Western at Denver, one reason being that United would short-haul itself on transcontinental passengers by carrying them only to Denver, rather than on to Salt Lake City, where the two companies maintained an interchange agreement.

"The point is," the United petition states, "we do not want to cooperate with respect to interchange at Denver. We want the longer haul and we have a legal right to it." At another point, the brief declared that if such an agreement on four-engine aircraft is reached at Denver "complete control regarding equipment, operations and handling of passengers will have to be vested in United."

TWA Lists Four Points

TWA's four points of contention in the Denver-Los Angeles decision were:

"1. While the Board admits that an award to Western would result in 'substantial diversion' from TWA, it has failed to give consideration to the fact that this diversion will be so great as to injure TWA seriously.

"2. The apparent reason in the Board's opinion for denying TWA the route requested by it was the conclusion that TWA would divert 'the bulk of Western's through traffic on Route 13.' There is no evidence in the record to support this conclusion, and, in fact, it is contrary even to the position of Western.

"3. The Board completely fails to mention the fact that TWA can provide the proposed service at a far lower cost than can any other applicant . . .

"4. While the Board admits that TWA could 'obviously' provide Denver with direct service to important eastern cities to which Denver does not presently have through service, nevertheless the Board appears to give no weight to this fact."

United's petition held that in the Denver-Los Angeles decision, the CAB said in effect: "Let's give the public a duplication of the headaches of Salt Lake City by creating at Denver a junction point on the great circle transcontinental route between Denver and Los Angeles."

"We may as well tell the Board now that United Air Lines is not going to fly any Indian heads to New York City." (The Indian head is Western's official insignia.)

Denver May Become 'Stub'

The United petition asserted that if the CAB does not grant reconsideration and reverse its decision, "the Denver junction point, like the Salt Lake City junction point, will become permanent. The route the Board calls the 'Denver-Los Angeles cutoff' will be converted into the 'Los Angeles-Denver stub,' and it will be a permanent stub just as the Los Angeles-Salt Lake City route is a permanent stub so far as transcontinental travel is concerned."

Taking direct issue with the CAB's decision, the petition asserts that "a plea that two carrier transcontinental service should be improved by means of one-carrier service has been answered by a decision that the country deserves a double dose of two-carrier transcontinental service."

"This tragic mistake has been made because of a desire to protect a corporation against the diversion which will come as a result of public preference for the new route.

"The Board has been so intent upon aiding small carriers (and incidentally making richer the rich men who control them) that it is slighting its primary and all important duty, which is to develop air transportation and make it as effective as possible for the traveling public."

United holds that in the present case, the CAB must grant reconsideration of the decision because in this instance "the Board itself is not sure that the answer which is pondered over five months is sound."

The petition held that the CAB's statement of diversion to Western in the event United was awarded the route was a generality," and that the CAB had not "tried to prove that the award of the route to United would seriously impair Western's position as a strong, independent carrier."

"It is the duty of the Board in preparing opinions to set forth and either adopt or refute the principal arguments advanced by the parties . . . If the Board would do that we would have a government of law instead of a government of men in transportation.

"This Board has been functioning since 1938 and by now should have developed a comprehensive body of precedents to govern this industry. This has not been accomplished."

The petition obviously referred to Western's recent acquisition of Inland Air Lines when it declared that "Western's primary object in acquiring lean and unprofitable routes is to use them for stepping stones for the acquisition of strong and profitable routes.

"The plan is for Western to make itself so weak that the Board will be forced to make it strong. Then some day there will be a sell out."

The petition pointedly asked at one junction if the CAB assumed "that Western and United, the parallel competitors and perennial litigants, will execute and continue in effect indefinitely an agreement providing for the interchange of four-engine airplanes at Denver."

Transcontinental Aspects Stressed

"The Board has either given the Denver-Los Angeles route to Western Air Lines on the assumption that an interchange agreement will be executed and continued in effect, or the Board has decided that, without expressly saying so, that more than 50,000 passengers a year shall change airplanes at Denver."

TWA placed special emphasis on the transcontinental aspects of the Denver-Los Angeles decision, declaring that it had the effect of making United's transcontinental route—through interchange with Western at Denver—45 miles shorter than the shortest coast-to-coast route over TWA. This, the petition held, would destroy TWA's sales promotion of the "shortest, fastest (route) from coast to coast."

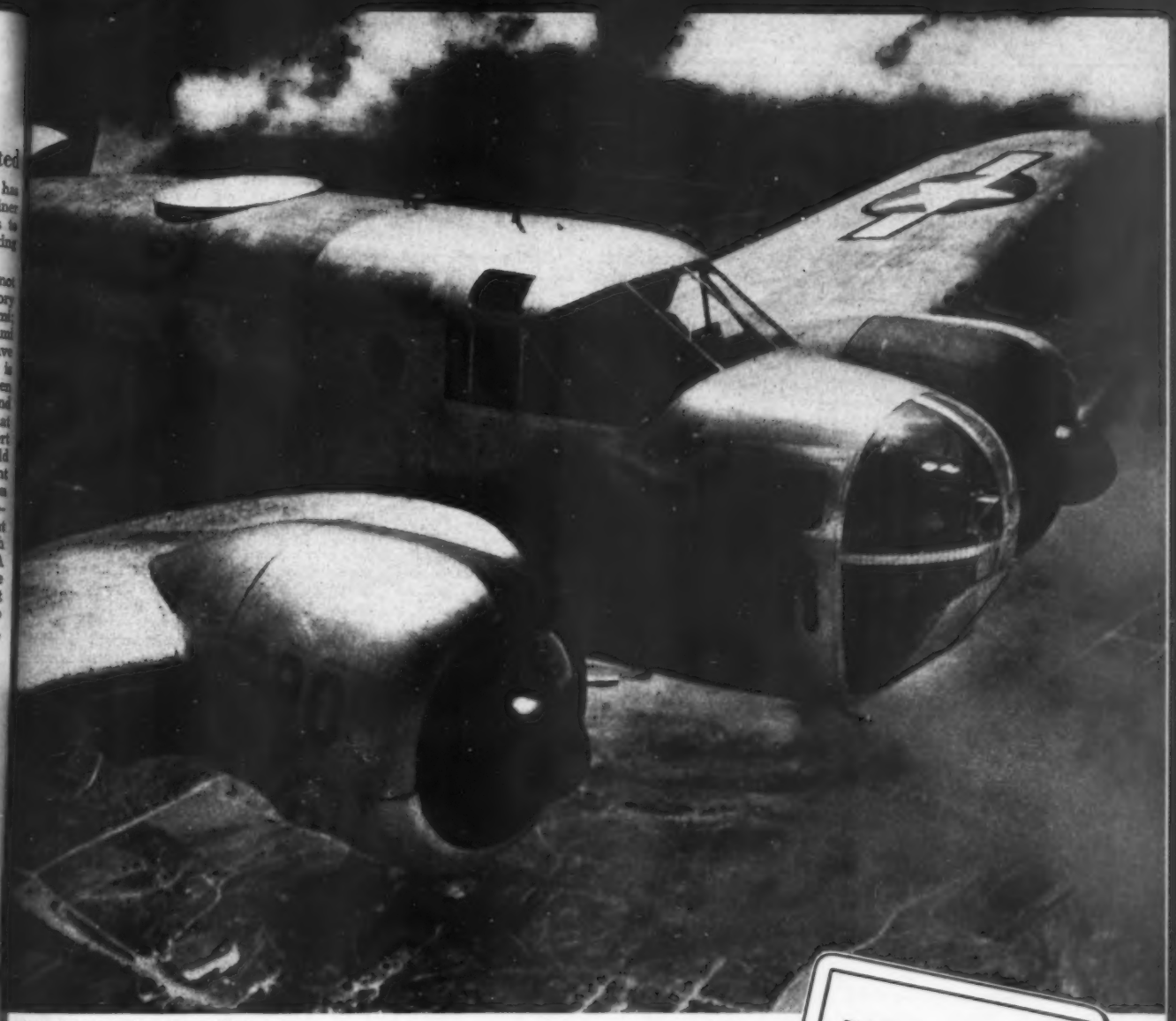
"It is incomprehensible that without setting forth and discussing all the facts, the Board should take the position that it is sound for United to hold the shortest transcontinental route to Portland, the shortest transcontinental route to San Francisco, and in addition, be the chief beneficiary of the shortest transcontinental route to Los Angeles."

The petition held that the CAB had failed to explain how it arrived at the conclusion that if TWA were awarded the route, it would divert "the bulk of Western's through traffic" on Route 13.

Files Exceptions In Great Lakes-Florida Case; 7 Points Listed

D. Franklin Kell, public counsel, has filed exceptions to the report of Examiner Ross I. Newmann in the Great Lakes to Florida case (Docket 570 et al) taking issue with these seven points:

1. That the Appalachian barrier has not prevented the establishment of satisfactory rail service between Detroit and Miami; 2. that all sections of the Detroit-Miami route recommended by the examiner have good surface connections; 3. that there is no strong community of interest between the three cities—Detroit, Toledo and Columbus—and Charleston, W. Va.; 4. that traffic potentials are inadequate to support a Detroit-Miami service, which would result in considerable diversion to present connecting services; 5. that the extension of Eastern Air Lines' Route 6 from Columbia to Detroit would create for that carrier virtual control of north-south traffic east of the Mississippi River; 6. PCA would suffer substantial diversion by the extension of Eastern's Route 6; 7. that Delta should have been recommended to provide service between Knoxville, Tenn., and Columbia, S. C.



Official U. S. Army Air Forces Photo
Beechcraft AT-11 Bombardier Trainer.

BOMBARDIER AT WORK

A bombardier's training is not easy. It demands long days and nights of intensive study and work. That is one reason why American bombardiers have made such excellent scores over enemy targets. Since 1940 most AAF bombardiers, and a large percentage of our country's navigators and pilots as well, have been trained in Beechcrafts. The high regard that these officers have for Beechcrafts is one of our most valued assets.

Beech Aircraft

CORPORATION

BEECHCRAFTS ARE DOING THEIR PART

WICHITA, KANSAS, U. S. A.

Oral Argument in U. S.-Canada Case

Direct Washington-Canada Service Needed, Several Airlines Contend

Colonial, American, PCA, Eastern, and United Are Involved in Proceeding

THE NEED for direct air service between Ottawa-Montreal and Washington was stressed by applicants appearing before the Civil Aeronautics Board last fortnight for oral argument in the U. S.-Canada case (Docket 609 et al).

Philip Schleit, public counsel, expressed opposition to the need for the direct Washington - Canada service on the grounds that the standards of economics governing public convenience and necessity did not show sufficient traffic to warrant the service.

Seth Richardson, counsel for Colonial Airlines, pointed up the case when he asserted that "every applicant is in favor of connecting Canada and Washington."

Richardson said that if Canada were eliminated from the northern end of Colonial's proposals, then "you cut the legs off the whole proceeding." The examiner's report recommended Colonial between Ottawa and Burlington, Vt., and the applicant sought in addition a two-way route southward into New York and Washington.

If American and Eastern were certified in the present proceeding, Richardson said, the theory is that all carriers would benefit, but when the bottom of the list is reached, there is no place left for Colonial to go. He said the airline was in a unique position to furnish direct service to Washington by virtue of the fact that it is already serving Canada.

American vs Colonial

Robert O. Griffith, American counsel, countered with a statement that if Colonial were certificated, it can furnish only a north-south service, and cannot tie up the Washington-Canada service with its entire system.

Griffith declared that if American's proposals for service between Wilkes-Barre and Philadelphia and Syracuse and Montreal were granted, then the route between Ottawa and Washington would become an automatic thing through tying in connections with America's present routes.

Not only could American provide a direct Washington-Ottawa service, Griffith declared, but through other of its proposals Montreal and Ottawa would be connected with Ohio and upstate New York cities, between which there is an industral community of interest.

Robert J. Wilson, PCA counsel, characterized Rochester, N. Y., as "the forgotten city of the air," and pointed out the need for additional north-south service to that city, now served only by American.

The addition of Rochester to PCA's system, he said, would serve to strengthen Routes 34 and 46—both of which showed deficits in 1941-42—in addition to providing "fine service" to Washington, Pittsburgh and Charleston.

Wilson emphasized that there was need for the route, which he said would create no diversion to any present carrier. Northward from Rochester, PCA seeks to serve Montreal and Ottawa through further extension of Route 34.

He said Route 34 "would have its jugular vein cut" if American's proposal to serve Wilkes-Barre was granted, and that the proposal of Page Airways paralleled the PCA route so closely that neither could survive in the event Page were certificated.

In response to a question from CAB Member Oswald Ryan, Wilson declared that the Canadian government should welcome American service between Montreal-Ottawa and the U. S. because of the great vacation travel between the two countries—particularly with the elimination of the Great Lakes barrier.

E. Smythe Gambrell, Eastern's counsel, asserted that the international aspects of the case were of prime importance, since Canada outstrips all other countries in commercial importance to the U. S.

Gambrell said Eastern offered the "most comprehensive coverage" of any carrier in promoting Canadian service, since it offered one-carrier service to Latin American gateways at Brownsville, New Orleans and Miami.

CAB Vice Chairman Edward Warner had pointed out that traffic studies between Ottawa and Washington did not reflect a particularly strong economic need. Gambrell asserted that "ordinary commercial tests" should not be applied to that traffic since a clear governmental, industrial and political relationship between the two countries had been demonstrated in the recent International Aviation Conference at Chicago.

EAL Service to Reading

Gambrell emphasized that Eastern proposed to provide service to Reading, Pa., on its north-south U. S.-Canada route, as well as to such industrially important cities as Binghamton, Scranton and Wilkes-Barre.

John T. Lorch, United Air Lines counsel, said his company proposed direct service between Ottawa and Toronto and the midwestern area of the U. S., and the midcontinent area through Denver to the West Coast. Such a direct, single carrier service does not now exist, he said.

Lorch predicted that Montreal would become a major terminal on transatlantic air routes, and that United would be able to tie in with that service and carry traffic to and from the midwest to Europe through the Montreal gateway.

El Paso-Oklahoma City-Memphis Case Reopened; AA, CAL Affected

Wichita Falls, Lubbock Had Petitioned; TWA Rehearing Is Denied

THE Civil Aeronautics Board last fortnight reopened the El Paso-Oklahoma City-Memphis case (Dockets 503-413 et al) for further argument with respect to service to Wichita Falls and Lubbock, Tex. The action was taken in response to petitions from the two cities.

The CAB at the same time denied the petition of Transcontinental and Western Air for rehearing, reargument and reconsideration of the decision, dated Nov. 10. TWA especially protested the addition of Oklahoma City and Tulsa to the transcontinental route of American Airlines.

The CAB's action in reopening the case with respect to Wichita Falls and Lubbock affects the applications of American (Docket 1143) and Continental Air Lines (Docket 1126). Neither carrier has filed for rehearing, reargument or reconsideration, but it was understood that they have the matter under consideration.

Continental sought to serve the two cities as intermediate points on a route between Hobbs, N. M., and Oklahoma City. The dissenting and concurring opinions filed by CAB Members Harllee Branch and Oswald Ryan had recommended that American pick up the two cities as intermediate points between El Paso and Tulsa, via Oklahoma City.

The petitions of Wichita Falls and Lubbock leaned heavily upon this minority opinion. The majority opinion left Lubbock without air service. Wichita Falls is a certificated point on Braniff Airways Route 15.

The cities in their petition said that the CAB had promised action with respect to air service for them in either the American or Continental applications after an earlier denial of Braniff's application in Docket 505, which sought to make Lubbock an intermediate point between Dallas and Amarillo.

Following the El Paso-Oklahoma City-Memphis decision, Braniff filed an application (Docket 1682) to serve Wichita Falls and Lubbock and asked that it be consolidated in the Texas-Oklahoma proceeding, scheduled for hearing in Ft. Worth, Jan. 23. The CAB denied the consolidation.

TWA in its petition for reconsideration of the decision, which gave American a cut-off on its transcontinental route, asked specifically that the CAB revoke its order and issue a new decision awarding TWA Oklahoma City, Tulsa and Joplin, Mo., as intermediate stops on its Route 2.

The petition declared that the CAB had taken an "inconsistent and untenable position" in refusing TWA's application on the grounds that it would divert "small amounts of traffic from American and in the same opinion has awarded a route requested by American despite the fact that its primary purpose is to duplicate service available on TWA . . ."

Post-war Commercial Planning . . . **Sure**

but NOT WITHOUT THE VITAL PART THAT ABLE AVIATION SERVICE MUST PERFORM . . . .

● American genius in war-time has developed amazing new standards for peace time living—it has also broadened the problems for future American commerce.

● The thousands of new consumer commodities and many innovations in old ones to be made available after the war—the productive conversion and subsequent sale and distribution of merchandise is but part of the great responsibility facing commerce.

● Into this projected, gradual crystalizing picture is being fitted a new scheme of transportation service to meet a new step up in peace-time trend—a trend that will not turn back to the accepted transportation schedules of old.

● In this new planning aviation is part and parcel and its common operation in varied phases is being wisely incorporated in the basic structure of post-war commerce.

● AVIATION ENTERPRISES as an organization, is prepared for this new era—prepared with tested experience and efficiency in aviation operations of which transportation of tomorrow must be equipped; the character of aviation service that will need be as modern as the new commerce it will serve.

AVIATION ENTERPRISES

Complete Aviation Service for the Southwest

• HOUSTON •

Few Route Applications Filed During Last Fortnight of '44

APPLICATIONS by two presently certificated air carriers and four prospective operators reflected a year-end lag in new route developments in the CAB's Docket section during the past fortnight.

Continental Air Lines sought extensions to St. Louis and Chicago, and Transcontinental and Western Air applied for an extension between Indianapolis and Cleveland. Among the applications filed by non-certificated operators was one proposing an extensive system of routes to be served by helicopter.

Following is a round-up of the applications filed:

Continental Air Lines

This presently certificated carrier has applied to the CAB for two extensions to its present Route 60 between Denver and Kansas City, one to Chicago and the other to St. Louis. No intermediate points are named in either applications. The Kansas City-St. Louis mileage was given as 228 miles, and the Kansas City-Chicago mileage as 404 miles.

Robert F. Six, Continental president, said the company proposed to use four-engine equipment on the new routes and that negotiations were underway with a view to placing orders aggregating "several million dollars" for such equipment. Use of the four-engine planes would permit reductions in flying times and fares, he said. (Dockets 1693, 1694).

Transcontinental and Western Air

This presently certificated carrier has applied to the CAB for a new 259-mile route between Indianapolis and Cleveland. The proposed route would serve as an extension of TWA's present Route 2 between St. Louis and Indianapolis. (Docket 1692).

Central United States Airlines

This applicant, of 1492 Colfax Ave., Benton Harbor, Mich., has filed an application with the CAB for 12 routes over which it proposes to use helicopters in the transportation of persons, property and mail. The route terminals are: Chicago-New York, two routes vie different intermediate points; Cleveland-Pittsburgh, Indianapolis-Kansas City, Chicago-Kansas City, Chicago-Omaha, Chicago-Bismark, N. D., two routes via different intermediate points; Bismark-Kansas City; South Bend-Detroit, Toledo-Madison, Wis., and Detroit-Lansing, Mich. (Docket 1695).

William J. Lank, Jr., and Clifton S. Stovall

This partnership of Route 2, Box 12, Shreveport, La., has applied for a certificate of convenience and necessity for the transportation of persons, property and mail by conventional aircraft between Kansas City, Mo., and Shreveport, La., via Joplin, Ft. Smith, Hot Springs and Texarkana, with an extension from Shreveport to Beaumont, Tex. The applicants state that they have options to buy two Lockheed 12s. (Docket 1691).

Olson Steamship and Navigation Corp.

This applicant, of P. O. Box 628, Pasadena, Calif., has filed an amended application under Docket 1570, proposing service between San Francisco and Los Angeles and Calcutta, India, via Honolulu, Midway, Tokyo, Shanghai, Hong Kong, Manila, Batavia, Bangkok and Rangoon.

In addition to proposals to use multi-engined aircraft, the applicant calls on the U. S. government to supply the necessary funds to manufacture "the Olson Flying Cloud, a plane of secret design." "The Board is requested to accept the proposal of furnishing the wherewithal to produce the above mentioned aircraft Flying Cloud before design, plans and program are offered to a foreign nation for production."

Seaboard Air Transport

This applicant has filed an amendment to its application under Docket 927 outlining a new route from Lumberton, N. C., to Norfolk, Va., via Goldsboro, Greenville, N. C. The applicant also asks stop-over privileges at Sumter, N. C., on its proposed Florence to Columbia route.

Seas Shipping Co.

This applicant has filed an amendment to its application under Docket 1366, outlining scheduled air transportation between New York and Johannesburg, South Africa, via Port of Spain, Natal, Monrovia and Leopoldville.

Westland Airlines

This applicant of Central National Bank Bldg., San Angelo, Tex., has applied to the CAB for a certificate of convenience and necessity for the transportation of persons, property and mail by conventional aircraft over six routes, between the following terminals: San Angelo-Marfa, San Angelo-Ft. Worth, Ft. Worth-Tulsa, San Angelo-Pecos, Tex., Ft. Worth-Oklahoma City, and Ft. Worth-Austin. Thirty-three intermediate points are included in the route applications, over which local feeder and pickup services are proposed. (Docket 1690).

North American Airlines Proposes 'Coach Style' Service Out of Chicago

North American Airlines, Ltd., has filed its exhibits under Docket 1601, proposing "coach style" air transportation over a system of feeder routes radiating out of Chicago and covering the Lake Michigan area with intermediate stops at such points as Milwaukee and Green Bay, Wis.; Traverse City and Muskegon, Mich.; and South Bend and Indianapolis, Ind.

John C. Luttrell, Washington representative for the company, said the "coach style" service proposed, contrasted with the "deluxe pullman style" of the present airlines. No meals will be served, nor hostess service provided. Passengers will carry their own baggage, and the co-pilot will act as ticket checker.

North American proposes to use 16-passenger converted Lockheed C-60s, which will be fitted with movable bulkheads for quick conversion to all-cargo planes, or various combinations of passenger-cargo carriers. For its "coach style" operation, the applicant proposes passenger fares of 4.3c per mile, and Luttrell said no mail contract would be required for the operation to show a profit, although North American offers to carry mail for the .3 mill compensatory rate.

The exhibits show a "break even" operation on $402,932 total operating revenue, based on 8,350,000 passenger miles, 50 pounds of mail average per day, and a 400-pound average of express and freight per day. The exhibits estimate an average of 147 passengers a day and an average journey of 156 miles by 1946.

Travel Agents Well Aware That Postwar Aviation Will Affect Their Business

AMERICAN AIRLINES has completed a survey of 300 travel agents to determine their planning and thinking on the future picture of travel with respect to air transportation.

"The survey makes it very clear that travel agents everywhere understand fully the effect which aviation will have on travel after the war," according to J. H. Theilig, national manager of American's agency department.

"They visualize that increased comfort and wider scope brought about by aviation will result in greater volume, longer trips, and a world psychology in travel. Agents seem to be fully aware that this means increased responsibilities for them."

The survey showed that the travel business is more than just a peace-time industry, Theilig said.

"While quite a number of travel agents are at the present time connected with government offices and other war organizations where their knowledge of international transportation, foreign exchange, and world affairs helps to expedite the war effort, many agencies function today as traffic offices for manufacturing and other commercial companies engaged in war work. This eliminates for such companies the necessity to individually establish their own traffic departments," he said.

The American survey disproved the "fallacy that travel agents are not sufficiently aggressive in their anticipation of coming conditions, and that they rely on transportation companies to present them with a complete set of plans for the future."

Letters written by travel agents in response to the airlines' questionnaire "prove that the views of the agents concerning the future are exceedingly sound and intelligent. They reflect the fact that travel agents invest their own money in their programs and in the publishing of literature. They have a very definite stake in the developments of the future."

Theilig said the letters reflect the "obvious individualism of travel agents," much of which is explained by the fact that the problems of agents differ, depending on the communities within which they operate.

"Many think in terms of international travel, while others wish to concentrate on domestic operations. Individualism seems to be the strength of the travel agent. Each one stands on his own feet, and when he considers his relationship with the carriers, he does so in terms of his individual requirements."

The survey was made in the form of a personal letter to the 300 travel agents, outlining four questions. A more than 60% response is anticipated on the basis of present returns, Theilig said.

'Plastic Surfacing Will Aid Merchandising'

One Manufacturer's Research and Production Has Produced 12,000 Formulas; Wide Postwar Use Anticipated

By E. J. FOLEY

THE postwar products of the entire aviation industry will reflect in some measure the manifold developments in the versatile and literally colorful plastics. Of equal importance to the manufactures of aircraft, components and parts should be the appreciation and application of *plastic surfacing* which can contribute such important merchandising advantages as extension of product life, enhancement of appearance and insurance of functional performance.

Foley

The molded, cast and extruded plastics have caught the public fancy and may have overshadowed the field of finishes in the manufacturers' minds. Accordingly, it is timely to review plastic surfacing as presented by an expert—Roxalin Flexible Finishes of Elizabeth, N. J. The "expert" rating is not only our own but reflects the thinking of some half dozen aviation interests of our acquaintance. Added justification rests in the company's 20 years of specialized experience.

The company has concentrated upon research and production of finishes derived from the plastic compounds and as evidence produces 12,000 different formulas—each a specific solution for a customer's problem. The elements of every finish puzzle—adhesion, chemical resistance, abrasion resistance and color—take on added complexity when plastics are the medium.

The plastic trade-names that have become familiar to the aviation industry as solids can be transformed into surface coatings which possess many of the desirable properties of the solid.

The acrylate "family" includes Lucite and Plexiglas, which have come to be thought of solely as fodder for bomber noses and similar applications. From the same "tree" come plastic surface coatings that are clear and colorless and do not yellow in sunlight. They offer the frequently necessary resistance to water and weather, adding to it the star attraction of resistance to chemical fumes.

Lumarith, Plastacle and Tenite I are three of the more popular members of the cellulose acetate group that have found their way into lunch boxes, decorative fixtures in transport aircraft and control wheels. The transformation into a surface finish results in a low flammability coating, which is mar-proof.

Neoprene, Thiokol and Hycar are three rubber-like elastomers that have gone into gasoline hose linings, tires, grommets, shock absorbers, gaskets, etc. Flexibility and resistance to solvents are two key characteristics of the materials themselves which carry right over into the derivative surface coatings. Low moisture absorption and chemical resistance go hand in hand with the other features of elastomer finishes.

Urea and melamine are the bases for the Beetleware that graces the airline food tray, the Catalin knobs on PAA's B-314 engine controls as well as Plaskon and Uformite. Surface finishes that stem from this line provide unusual mar resistance together with color permanence, extreme hardness and excellent solvent resistance.

Koroseal and Vinylite, vinyl chloride and vinyl acetate copolymers appear in solid form in such diverse applications as unbreakable watch crystals, radio transcription records, aircraft wall paneling, protective covers for emergency exit handles, etc. The resultant coatings are marked by their utility as corrosion preventives, protecting also against food acids. They retain their inherent flexibility and resist abrasion.

Those plastic ice cube trays you have seen may have been formed from an ethyl cellulose compound. The surface coatings that owe their existence to this line of plastics have the prime advantage of low temperature flexibility, combined with heat resistance. They also afford protection from acid and alkali.

The phenolics appear as distributor heads, jack box face panels, ear phones, etc. Some of the familiar trade names are Durez, Resinox and Bakelite. The key characteristic of the plastic finishes of this family is water resistance. Strength against electrical breakdown is another feature that carries over into the liquid form.

If Elasticity is Desired:

If the problem calls for elasticity, high film strength and good insulating properties, the prescribed finish may originate from the polyvinyl butyral plastic compounds. We find it easier to recognize them by such names as Butacite, Saflex and Vinylite. In their solid form they appear as the interlayer in safety glass, and also in self-sealing gas tanks and in life rafts.

The foregoing have been descriptive generalizations, sketches of the characteristics which result from the transformation of some of the commonly known solid plastics to liquid surface finishes. Only by a couple of specific case histories of what *has been done* can we point up what *can be done* in this field. Without holding any brief for Roxalin, we draw upon their experience for our examples and here's why. Their brochure, "20 Years of Plastic Surfacing," just published, is to blame. We've seen a lot of trade literature and this presentation really hits the mark as a technical sales story. Their "laboratory attention" to specific complex finish problems should appeal to the aviation industry, in our opinion.

A plastic coating called Paladin was developed in clear form for the specific solution of brass hardware manufacturers' troubles with crystal spotting on their products. Created to fill this limited need, exhaustive tests revealed another more significant application. It proved to be the aspirin for one of industry's biggest finishing headaches—an application providing adhesion to untreated zinc and cadmium plating which does not flake or peel under impact or abrasion.

It has this same effective affinity for other metals such as copper, polished chrome and stainless. Use as either a one-coat finish or a primer under all types of organic coatings is practical. Present limitations to the color line make it available only in clear or black, but full range of colors is expected postwar.

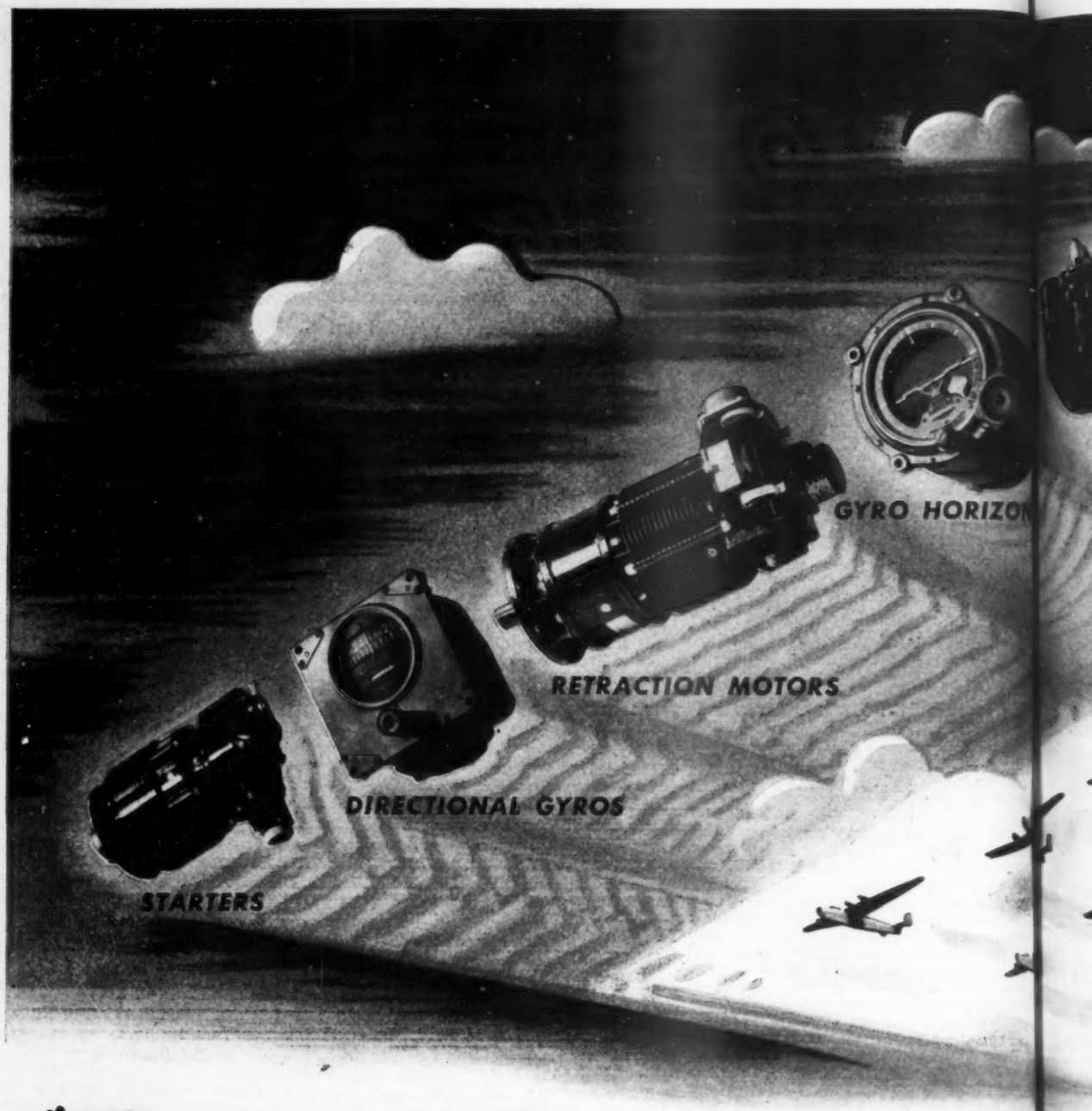
Eight Coat Schedules

The humid heat of a pasteurizing room, combined with the constant scrubbing with strong soaps and germicides, makes it tough living for the finish of cast aluminum instrument housings. Eight coat schedules are not unusual for such a job and even at this there is no guarantee. However, a three-coat thermosetting plastic finish has been formulated to give porcelain-like glossy finish in white, any primary color or tints. A test surface was exposed for seven months in a salty humid atmosphere and twice a day washed with cold water. At the conclusion of the test it was still perfect.

Application of this material is by spray and good adhesion is possible on unprimed steel, brass or aluminum. Heat curing at 250-400 F for a period of from one hour to one minute, depending on object size, is required.

These are just spot checks in the field of plastic surfacing. The range of possible and tested applications is almost unlimited. Obviously the success of the science is dependent upon laboratory formulation to the specific needs of the job. Plastic finishes in the color ranges of the expensive plastic solids may be applied to a more economical, if less attractive, plastic unit. Polymerizing plastics can be applied to paper, making it greaseproof. They dry in seconds. Gasolineproof lacquers and flexible lacquers for use in roll printing of textiles are a couple more plastic victories.

Most familiar plastic surfacing for the aircraft industry is provided by the range of fabric finishes or dopes. There is a need for an ever-increasing appreciation of the versatility of these derivative materials—a few of which have come to wide use in our industry in their finish form. Don't misunderstand our presentation. We're not selling *anything* or *anybody*. Plastic surfacing holds great promise, in our opinion, and one source has gone a long way toward developing that promise. We recognize their efforts.

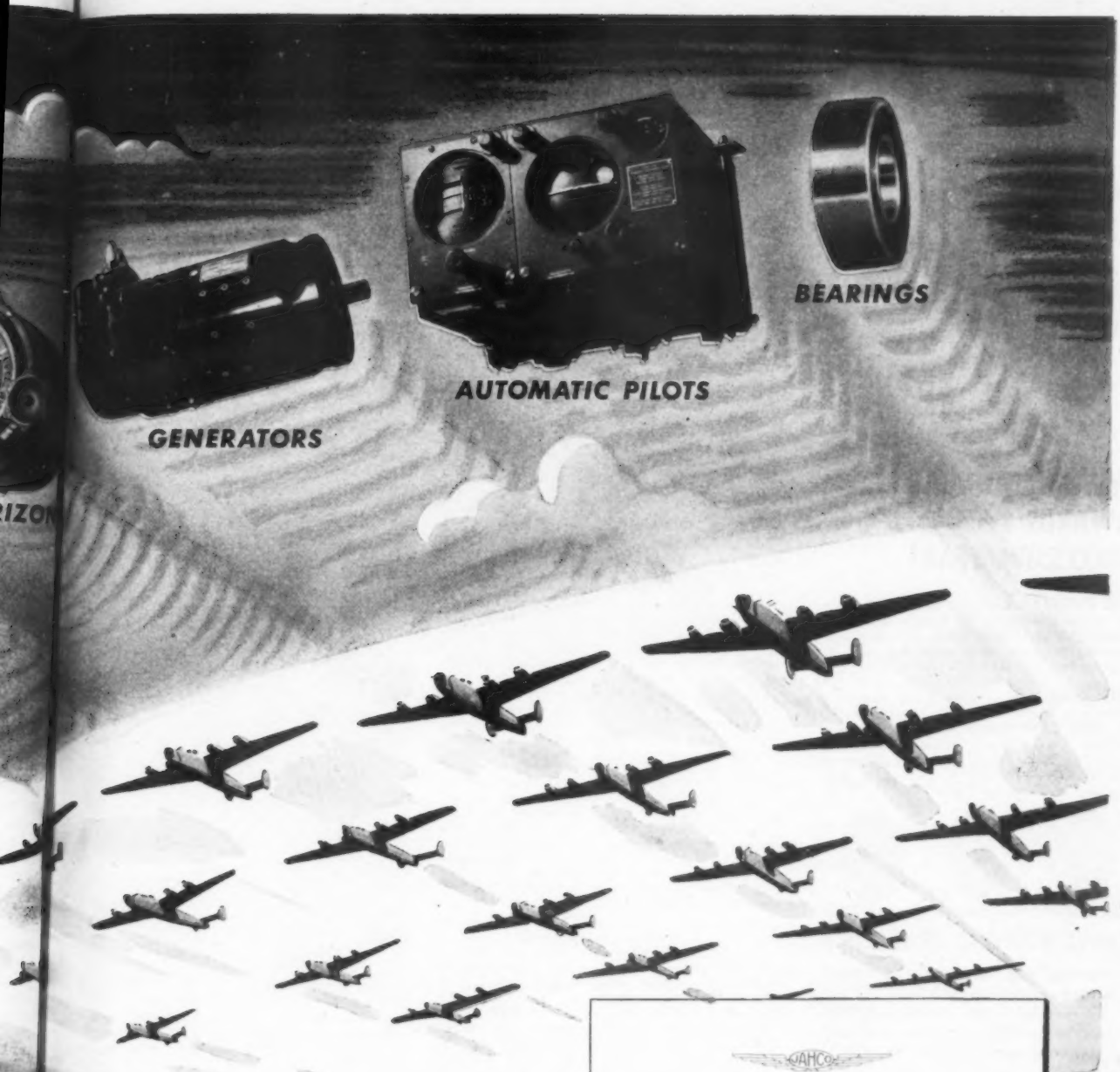


"These are a few we can talk a

Today, the eight Jack & Heintz plants are turning out 36 different war products—in unending streams for the finest aircraft in the world. Our newest assignments are military secrets, but jobs we *can* talk about now are the instruments, auto pilots, generators, starters, motors and bearings that have gone to war by the tens of thousands.

This equipment is used in pursuit planes, bombers, transports, patrol boats, trainers, gliders . . . and even blimps. Its performance has been such that the Jack & Heintz nameplate is now a welcome sign of dependability to the men who gamble their lives on it daily in every corner of the globe.

From the first, Jack & Heintz has led the



about now"

way in reducing weight, boosting output and increasing service life on every job undertaken. Engineering like this has helped keep America's air fleet first in the war . . . it will be equally effective in holding that place in peace.

Watch Jack & Heintz for new things in aircraft!

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Jack & Heintz, Inc., Cleveland, Ohio, manufacturers of Aircraft Engine Starters, Generators, Gyro Pilots, Gyro Flight Instruments, Magnetos, Motors.

American Aviation

WRITERS Carry Off Top Honors Again

WINNING ANNUAL AWARDS 7th SUCCESSIVE YEAR!

THE EVENT: Annual Competition Awards for aviation editorial leadership made November 9th by a TWA Board of Judges, outstanding in aeronautics, went this year to staff editors of *AMERICAN AVIATION*.

THE WINNERS: First prize, magazine division, to Wayne W. Parrish, Editor-Publisher of *AMERICAN AVIATION*, for his weekly column, "On the Beam," in *Liberty Magazine*; second to E. J. Foley, Equipment Editor of *AMERICAN AVIATION*; and third to Eric Bramley, its Executive Editor.

E. J. Foley

Wayne Parrish

Eric Bramley

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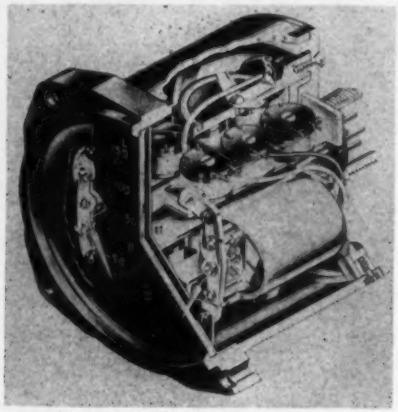
Equipment News

Thermometer Indicator

The Instrument Division of Thomas A. Edison, Inc. at West Orange, N. J., has been permitted to disclose details of its new design of electrical thermometer indicator of the ratio type. This instrument in its present form is



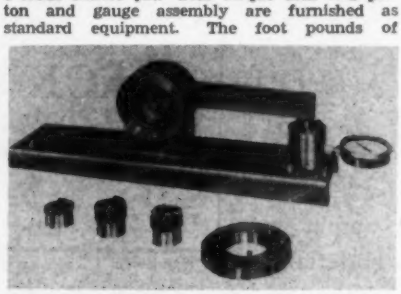
made to indicate, in connection with a resistance bulb, the temperature of oil, coolant, carburetor air, carburetor mixture, or free air. It is also being adapted to electrical pressure indication and other aeronautical uses.

The design of this instrument inverts the conventional arrangement of such instruments by using a small moving permanent magnet, the position of which is governed by the currents in two sets of stationary coils. This arrangement offers a further advantage in the elimination of all hair springs or rotary current-carrying devices, and results in a saving of about half of the weight of the conventional instrument. In common with all indicators of the ratio type, this instrument is almost unaffected by normal variations of battery voltage, and when de-energized can be arranged to swing off the lower end of the scale.

A small rheostat built into the instrument provides a simple and convenient means of recalibration after overhaul. The light weight and small size make it possible to incorporate two, three or four movements in a standard aircraft instrument case.

Portable Test Unit

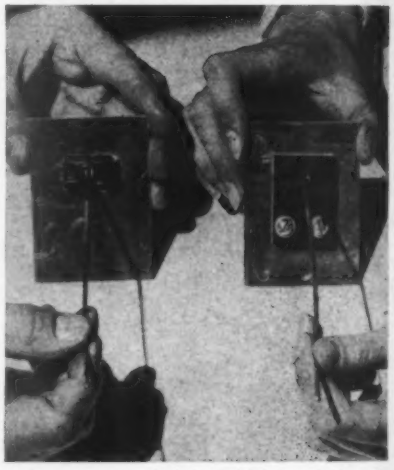
A compact portable test unit that can be easily bolted to work bench for testing clutch settings on starters used with engines up to 1000 cubic inch displacement. The unit consists of a one-piece casting, mounted on a 7" steel channel. To hold the starter to be tested, a 5" diameter mounting plate and one 3-tooth starter jaw with torque arm and piston and gauge assembly are furnished as standard equipment. The foot pounds of



torque are registered on the torque gauge which is connected to the piston assembly. Accessories which can be supplied as needed are, right or left hand 3-tooth starter jaws for 5" diameter mounting plate, right or left hand 3-tooth starter jaws for use with 4" diameter mounting plate, 4" diameter mounting plate, retracting motor jaw, low torque cylinder and gauge for use with retracting motor units. The size of the complete unit is 7" wide, 11" high and 28" long, and weighs approximately 85 pounds. A bulletin giving complete data on this tester is obtainable from the manufacturer, Airplane Manufacturing and Supply Corporation, Manufacturing Division, 6853 Lankershim Blvd., North Hollywood, Calif.

Cycle-Weld Snap Lead

A new type of fairlead for airplanes, made of plastic and two tiny pieces of rubber, which is snapped into panel openings instead of bolted as in the conventional manner, has been developed by the Cycle-Weld Division of Chrysler Corporation, and is being manufactured in the Chrysler Motor of California plant. Known as the Cycle-Weld Snap Lead, and weighing but 5 grams, the new device can be installed in ten to 30 seconds compared to two to 10 minutes for the present 26.2 gram type of fairlead made of bolted phenolic laminated plates. Airplane control cables are inserted in two types of fairleads in the picture below. At the left the cable goes into the hole, with clearance allowed by a bell-shaped mouth which minimizes friction and wear. At the right the cable is passing through a similar hole, which is not bell-shapped, and is subject to frictional wear. The fairlead on the left, developed by Chrysler is composed of two pieces of plastic held together by two tiny rubber strips which are 'glued,' or Cyclewelded, to form the lead into a single unit which is snapped into an airplane panel by the simple process of pushing it with the thumb. The fairlead on the right is composed of two pieces of laminated phenolic held together by eight



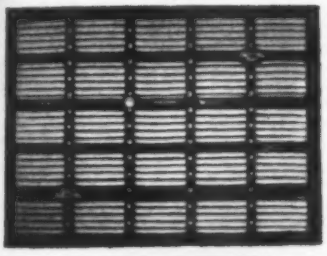
washers, nuts and bolts which must be assembled by the use of two hands and wrench and screwdriver. The phenolic type weighs 26.2 grams, or more than five times as much as the plastic type.

'Stalock' Lock Nut

Production of a new spring steel, quick-fastening lock nut called STALOCK, which offers 360° contact with screw threads, is announced by Adel Precision Products Corp., Burbank, California. This all-around contact allows positive gripping action and at the same time conserves tension locking power, thus permitting re-use of the nut. When screw or bolt is tightened, the spring action of nut causes contact surfaces to be forced deeper into thread channels thus affording ever greater locking action. Resulting tension prevents nut from loosening even under extreme vibration. Tests show the fastener meets all demands of light assemblies. Under tension tests, screw threads failed while fastener retained all original values.

A wide variety of STALOCK fasteners are furnished in two types: for sheet metal screws, standard sizes Nos. 4, 6, 8, 10 and 14; for coarse machine screw threads Nos. 6, 8, 10, ¼" and 5/16". Manufacturer will build shapes and sizes of special design on request, to reduce customers' assembly costs.

1



2

3

BOY, oh Boy, what a life is his. Only too often the first to be attacked by some enemy plane sneaking up on the tail of his machine. Usually the last to fight his way free from some pretty hot engagement . . . certainly " Tail-end Charlie " has no cushy job especially on Night-Op's.

But trained to the minute for his job with every possible contrivance to ensure the smooth working of the mechanism he controls, " Tail-end Charlie " just concentrates on his job . . . shooting 'em down and chalking 'em up.

And just where do Vokes Filters come into the story. Right here. Vokes Air, and Oil Filters are fitted to the aircraft he is flying whether it be British, Canadian or American. Vokes Air Filters supply 99.9% clean air to aero-engines. Vokes Oil Filters are used for main pump filtration of those engines. Vokes Low and High Pressure Filters for gun turrets are also fitted and incidentally also for retractable undercarriage hydraulic mechanism. Then again there is the Vokes Flametrap Silencer for both radial engines and in line engines extinguishing tell-tale exhaust flames.

Fighters, bombers, reconnaissance machines of British, American and Allied Air Forces operating in all battle areas have been fitted with Vokes Filters and have stood up to all demands made upon them. The practical experience gained we gladly place at the disposal of designers and producers of aero-engines and aircraft. We believe that this experience can be used not only to prolong the life and efficiency of aircraft, but help to secure added success and greater safety for our valiant fighters of the air and " keep 'em flying."

Vokes have produced over 3,000 models of their filters and, of course, provide the necessary housings and ducting systems. If you have any filtration problem consult Vokes, the pioneers and specialists in this work.

1. Vokes Oil Filter for Aircraft. 2. Vokes Aerovee Filter Element.
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DESIGNERS, PATENTEES & MANUFACTURERS OF AIR, OIL & FUEL FILTERS & SILENCERS

Harvard Study Lists 3 Conditions Necessary to Adjustment Survival

Lilley, Horton Analyze Financial Statements Of 10 Airframe Firms

A HARVARD Business School study concludes that the average airframe manufacturer will be able to survive the immediate postwar adjustment period with a reasonably satisfactory financial position if three conditions are satisfied:

1. If contract terminations are administered with a reasonableness which is consistent with the broad policies set forth in the Contract Termination Act of 1944.

2. If the company sets up its own administrative organization to handle terminations properly, concentrating prior to the end of the war on effective inventory management.

3. If the management curtails expenses realistically and rapidly.

These over-all conclusions were reached by Professor Tom Lilley and Instructor L. LaVerne Horton after analyzing projected financial statements of 10 leading airframe manufacturers for the years 1945 and 1946 and after assuming that for the purposes of study that large-scale aircraft production will cease by Jan. 1, 1946.

"The progress made during the last year in planning for contract terminations and conversion affords some grounds for optimism that these conditions may be fulfilled," the authors of the report stated.

Lilley and Horton found that the risk is great, however, that uncertainties and delays during the conversion period will unnecessarily impede the constructive developmental work required to promote maximum peacetime production. In order to eliminate confusion and unnecessary curtailment during conversion, they suggested that the following steps be undertaken:

Preplanning Urged

(a) Uncertainties regarding contract termination procedures can be reduced by a concerted effort on the part of industry and government organizations to preplan the methods, standards, and bases for making quick termination settlements well in advance of large-scale terminations. (b) Uncertainties regarding the loss carry-back provision of the tax law can be reduced by adoption of a Treasury proposal to accelerate payments of loss carry-back refunds. (c) Uncertainties regarding future aircraft production and development can be reduced by making every effort to determine future national air-power policies in advance of the end of the war, particularly Army-Navy procurement policies and policies for lease or sale of government-owned plant and equipment.

Apart from termination and tax problems, the authors feel that the basic question facing each aircraft manufacture is: conversion into what? The answer, they feel, will be vitally affected by the postwar aviation policies adopted by the government, including policies for Army-Navy procurement, plant and equipment disposal, surplus aircraft disposal, and Civil Aeronautics Board certification of new transport routes.

The report stated that though industry and government are giving considerable thought to conversion, much remains to be done if there is to be an orderly and successful transition.

"A danger still exists that the lack of coordinated industry and government preparations and the sheer mechanics of contract termination procedures will so delay conversion that future employment and development will be harmed," the report stated.

The authors made forecasts based on two projected financial statements as of Dec. 31, 1946 after assuming that war production would cease by December, 1945. The two forecasts—one optimistic and one "out-of-cash"—differ only in their assumptions regarding the magnitude of contract termination losses and the magnitude of the unreimbursed expenditures the companies must absorb in the immediate postwar period.

Termination Losses Estimated

"Based on favorable assumptions, it is estimated that net termination losses (for the average airframe manufacturer) would be about $1,100,000, or 1% of total inventories, and that unreimbursed expenditures in 1946 would be $11,200,000, or 2% of war peak annual expenses. In spite of these cash outlays, profits retained during 1944 and 1945 and the conversion of the postwar tax refund into cash could increase net working capital from the December, 1943, level of $18,100,000 to $23,600,000 in December, 1946. This working capital should be sufficient to meet reasonable contingencies and, if no further decreases occur, to finance adequately postwar sales at a level equal to 10% of war peak sales. In addition, if the loss carry-back provision of the tax law remains in effect, tax refund claims would be about $9,600,000. Under the present law, however, these claims cannot be considered as a current asset because they are not likely to be converted into cash until several years hence.

"If unreimbursed expenditures during the first postwar year reached a level of $29,000,000, equivalent to less than three weeks' expenses at the early 1944 rate, all the average company's cash would be eliminated, even though termination settlement losses remained at the assumed $1,100,000 optimistic level. Or if unreimbursed expenditures remained at the optimistic level, all cash would be eliminated by termination losses of $18,900,000, or 17% of total inventories. Under either set of assumptions, net working capital would decrease to $5,800,000, and the company would face a serious threat of insolvency. The chances of obtaining bank credit would probably be remote, in spite of large loss carry-back and other tax claims," the report stated.

After listing the basic variables which may either increase or decrease the ability of all the companies to absorb conversion losses and expenditures, the authors point out that in preparing for large-scale contract terminations, the companies have these responsibilities: (a) Constant pressure should be exercised to improve the control of inventories, to clean out obsolete and surplus items, and to improve the records kept. (b) The companies' administrative organizations to handle terminations should be placed under the leadership of top executives and should be set in action to handle current terminations and to plan for the larger terminations of the future. (c) In pre-planning for terminations, the companies have the obligation, not only to cooperate fully with the government and with subcontractors, but to take the initiative in making plans and presenting them to the proper officials.

The report stated that likewise, the government has important responsibilities. It lists them as follows: (a) Within the framework of the broad policies of the Contract Settlement Act, the government must work out detailed regulations under which large-scale terminations will be administered. (b) An administrative organization, competent to accept responsibility and to understand realistically the problems involved, must be carefully trained and placed in the field in time to work out detailed plans with the individual companies in advance of large-scale cancellations. (c) The men in local field organizations must be given the maximum encouragement to pre-plan detailed procedures with individual companies.

Curtailment Difficult

"Probably the most important single difficulty of the conversion period will be the curtailment of expenditures from wartime levels to drastically reduced peacetime levels," the report pointed out.

"The magnitude of unreimbursed 'momentum' expenses which the average airframe company must absorb during the immediate postwar period will depend on three major variables: (a) the ability and willingness of the company's management to curtail expenses (b) the extent of advance notice of contract terminations given by the government; (c) the extent to which post-termination expenses are reimbursed by the government.

Glenn L. Martin Co. Gives Maryland U. $1,700,000

The Glenn L. Martin Company's gift of $1,700,000 for the establishment of the Glenn L. Martin College of Engineering and Aeronautical Sciences at the University of Maryland promises to place the university in the forefront among colleges offering advanced training in aeronautical courses.

The bequest was jointly announced Dec. 17 by Gov. Herbert O'Connor of Maryland and Dr. H. C. Byrd, president of the school. Under the terms of the gift, $1,500,000 is to be used for the erection of necessary buildings and facilities while the remaining $200,000 will be used to establish the Glenn L. Martin Endowment Fund. Martin announced that he expected to add to this fund during his lifetime and that he would make further provision for its continuance and development under the terms of his will.

Larsen Eight-Place Helicopter Will Have Rotor 56 Feet Long

Agnew E. Larsen, aeronautical engineer and president of RotaWings, Inc., described the design details of a new eight-place twin-engined helicopter, which he said would maintain altitude on one engine, during his testimony at the CAB New England hearing in Boston.

Larsen said he was starting a mockup, and expected to begin production within a year, with two manufacturers interested in sharing development costs and four clients in the transportation industry interested in subscribing.

The powerplants, he said, would be 300 hp Jacobs L-6MB engines capable of 330 hp for take-off, with either one sufficient to maintain altitude with 220 to 240 hp output giving 55 mph forward speed.

He said in the event of an engine failure, it "would take less than one-tenth of a second to go over to auto-rotation, and about one-fiftieth of a second to disengage an engine.

Other details given by Larsen were: tricycle landing gear, hydraulically retractable; three-bladed anti-torque propeller with variable pitch and a 7½ ft. diameter; three-bladed rotor with a 56-ft. diameter, which he said "represents engineering which has virtually been perfected at present." Overall height, 13 ft.; length with rotor blades fully extended forward, 62 ft.; gross weight, 6,800 lbs.; empty weight, 4,450 lbs., useful load 2,350 lbs.; single control of the main rotor and engine speed on a control column with a wheel; and foot pedals governing the pitch of the anti-torque propeller.

Larsen estimated the cost as $37,000 without engines or radio.

On performance, he said a climb of 1,400 ft. per minute would be possible. He anticipates the cruising speed will be 90 to 100 mph.

"The failure of one engine will not result in any appreciable change in the operating characteristics of the craft," Larsen said. "Single engine failure will not impair to any noticeable degree, the maneuverability and control of the craft, as it has been designed to achieve satisfactory maneuverability throughout the complete range of throttle settings with both engines."

Eyes on Aviation Globe— Seated behind the desk at the De Havilland Aircraft factory, Rongotai, Wellington, New Zealand, was Nicolas Higgs, general manager of the De Havilland Aircraft Co. of New Zealand Ltd., as he talked with Wayne W. Parrish, editor and publisher of American Aviation Publications, during a visit to the factory by the latter Oct. 20.

Manufacturers' Savings Total 7 Million Yearly Through Salvage Plans

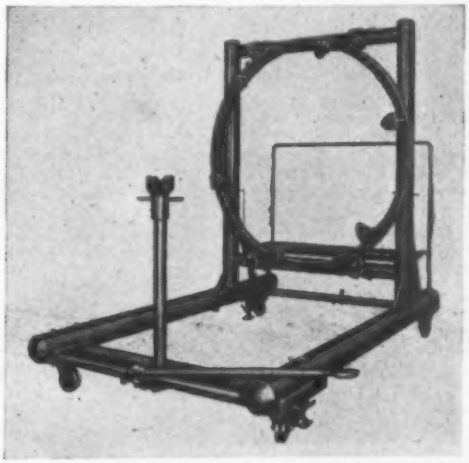
Aircraft manufacturers have saved up to seven million dollars annually through cutting down waste and through salvage of small parts, Lt. Charles P. Golding, of the Navy's Aircraft Production Advisory Staff, told the recent meeting of the American Society of Mechanical Engineers in New York.

Lt. Golding said that while aircraft conservation departments do not in all cases have functional jurisdiction over the salvage projects, they can see that the job is done. He said the support of top management is necessary to make the program successful. If such support is not given, he said, "the conservation department is rendered relatively impotent by inter-departmental jealousies and an attitude that conservation engineers are trying to pry into other people's business."

Lt. Comdr. O. C. Roehl, another member of the Navy's production advisory staff, declared that the greatest function of the conservation department lay in the contribution it could make to assist company management to increase overall operating efficiency.

In the field of production and materials research, Comdr. Roehl said, high speed milling is one of the accomplishments which has speeded aircraft production. Aircraft design is also a field in which tremendous strides have been taken, he added.

The WHITING B-29 NACELLE ASSEMBLY UNIT



Here is a new assembly stand, specially developed for B-29 power plant assembly operations. For use both by manufacturers in assembly lines as well as in maintenance operations, the new unit is available in a number of modified forms. The rotatable engine support and an adjustable work platform make all parts of the nacelle build-up easily accessible. Simplified, easily maneuverable, the B-29 Stand is another time- and trouble-saving unit in the Whiting line of matched handling equipment.

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WHITING CORPORATION

Aviation Division

Industry's Comments Incorporated in Revised Civil Air Regulations

Wright, Lankford Favor Placing Rules in Effect Soon; Expect More Flying

THE CAA and CAB expressed belief last fortnight that many revisions of the civil air regulations concerning private and non-scheduled flying will be in force by early next year.

Jesse W. Lankford, director of the CAB Safety Bureau, said that a number of important changes have been submitted to the industry for criticism and comment over the past several months, and that the industry's comments have, in many cases, been incorporated into the revised regulations.

Lankford and T. P. Wright, Civil Aeronautics Administrator, agree that the new regulations should be placed in effect as soon as possible, so that an expected upsurge in flying after the war will be facilitated instead of hindered.

Modifications in requirements for Pilot Certificates, Non-Air Carrier Operation Rules, and Air Traffic Rules, some of which have been submitted several times before to the industry, will do away with many factors which have deterred the public from flying, but at the same time, will not increase the ever diminishing hazards of air travel.

The most interesting proposal from the pilot's side, is that which would eliminate minimum ceiling requirement for flight under Contact Flight Rules. Until now, the rule has established a 1,000-foot ceiling and this has cost the private pilot countless millions of flying hours by keeping him grounded. Pilots have criticized it as a restriction which appears to have little logical connection with safety restrictions.

The suggested changes affecting pilots are as follows:

Private Pilot Certificates, Education—A proposed new requirement would be only that pilots be able to read and understand the English language.

Flight Skill—Under the proposed changes, it would no longer be necessary for the Private Pilot to demonstrate ability to enter and complete precision spins. In place of this maneuver, he is required to show ability to control the airplane at minimum flying speed and to recover from all types of stalls. As a student he must have had dual spin instruction.

Instrument Rating—Now the applicant must have logged at least 20 hours of instrument flight time, of which at least 10 must have been actual flight. Under the proposed revision, the applicant must log at least 40 hours of instrument training of which at least 30 must be in actual flight. This change is proposed because of the great increase in traffic under instrument conditions.

Airworthiness certificates are affected as follows: Previously, the private owner was required to have an annual inspection of his plane by a CAA inspector to maintain his certificate of airworthiness. It is proposed that the airworthiness certificate shall not expire, but that the owner must have an annual examination by a properly certificated mechanic. This will eliminate one of the difficulties most burdensome to private owners and CAA inspectors alike—that of arranging itineraries for inspectors which will accommodate owners without delay.

Pilot and plane logbooks are considered under the following: Now pilots are required to log all flights. It is proposed that they record only such flight time as is needed to substantiate experience for certificates and ratings which they seek.

Log books for planes have previously been kept for every flight. It is proposed that this requirement be dropped. In view of possible sales of used airplanes, however, it is considered essential to have some positive way of recording the "time" on aircraft and arcraft engines, and the use of a mechanical recorder is being discussed.

Instrument Flight—Now a pilot must have logged at least 2 hours of instrument flight in past 6 months to qualify for instrument flight. It is proposed that this be increased to 6 hours, of which 3 hours may be taken in approved type ground training equipment.

Miscellaneous rules are also involved:

Air Traffic Rule Aerobatics—Now no aerobatic maneuver may be performed under 1500 feet. It is proposed to eliminate this restriction entirely, retaining all other restrictions prohibiting aerobatics over cities, assemblies, in control zones, etc.

Weather Minimums—Now there must be a 1,000 foot ceiling for Contact Flight Rule flight. It is proposed that all ceiling restriction be removed. All other rulings to remain as is.

Miscellaneous—Under present regulations all repairs on an airplane must be made by a licensed mechanc. It has been proposed that a private pilot be permitted to make routine minor repairs and perform routine maintenance using proper materials, and following standard procedures.

Physically Handicapped Pilots—Formerly it was necessary for a handicapped student pilot to take his physical examination, and forward it to the central medical office in Washington. Routine procedure was for Washington to issue a formal denial of his eligibility. He then filed an appeal and was required to prove to a CAA inspector that he could safely take instruction, and should be granted a student permit. When he was ready for a private certificate, he made application, which was routinely denied. Having appealed, he would then arrange with a CAA inspector to take his flight test, which, if he passed it, would again be referred to the Medical division for final decision.

Pressure of work on CAA inspectors frequently has made it difficult for applicants to get in touch with them conveniently, so that this procedure often dragged out for months.

Under the revision now in effect, the CAA medical examiner in the field marks the applicant's medical certificate with the physical handicap from which he suffers, and the applicant goes directly to the flight inspector. The inspector is sole judge of whether he can fly safely, and his certificate is granted or refused on the basis of the flight test.

Asks CAA-Industry Cooperation on Private Aircraft

T. P. Wright, Civil Aeronautics Administrator, has recommended that funds be made available through the CAA to permit it to cooperate more closely with the aeronautical industry in the development of postwar private aircraft. Such a plan, he said, would provide an "occasional stimulant to the industry in the development of civil aircraft."

Wright said no concrete plans had been formulated by CAA, but that "such a program is worthy of consideration as a possible means of encouraging improvement in civil aircraft types." He said this was particularly important in the private owner field where such development is essential "to the realization of the potential market."

Wright said a study of the primary needs of civil aviation had resulted in a four-point policy for the immediate postwar period, which should provide for the following:

1. The fundamental facilities necessary for the expansion of air transport: (a) an adequate and efficient system of conveniently located airports; and (b) modernized and expanded airway facilities.

2. The fundamental facilities which will aid in the development of private flying; (a) a larger number of small airports conveniently located to population centers, both in the urban and rural areas of the country; (b) stimulus to the development of improved aircraft types; and (c) government assisted flight training.

3. Steps which will aid in the development of airmindedness of our youth; (a) the provision of technical aviation information to our educational institutions; (b) the encouraging of flight experience in our high schools and flight training in our colleges.

4. Steps which will enable us to take our proper place in the international aviation field; (a) by appropriate contacts with foreign government civil aviation agencies; (b) by training and informing foreigners in American aviation techniques; and (c) by assisting our aircraft manufacturing and transport industries in their expansion abroad.

Wright said that although development of private aircraft for personal flying was a departure from recent CAA activities, it goes back to a program instituted in 1935, when CAA efforts to develop a popular private plane contributed to the produciton increase of lightplanes from two in 1933 to 436 in 1935, 889 in 1936, 1,523 in 1937, and 4,455 in 1940.

Not only will such manufacture give the country a new and important industry, he said, but the amount of flying involved will develop a large backlog of young Americans experienced in the air and in the associated occupations necessary to keep pilots and airplanes flying, "all of which is important from the standpoint of national defense."

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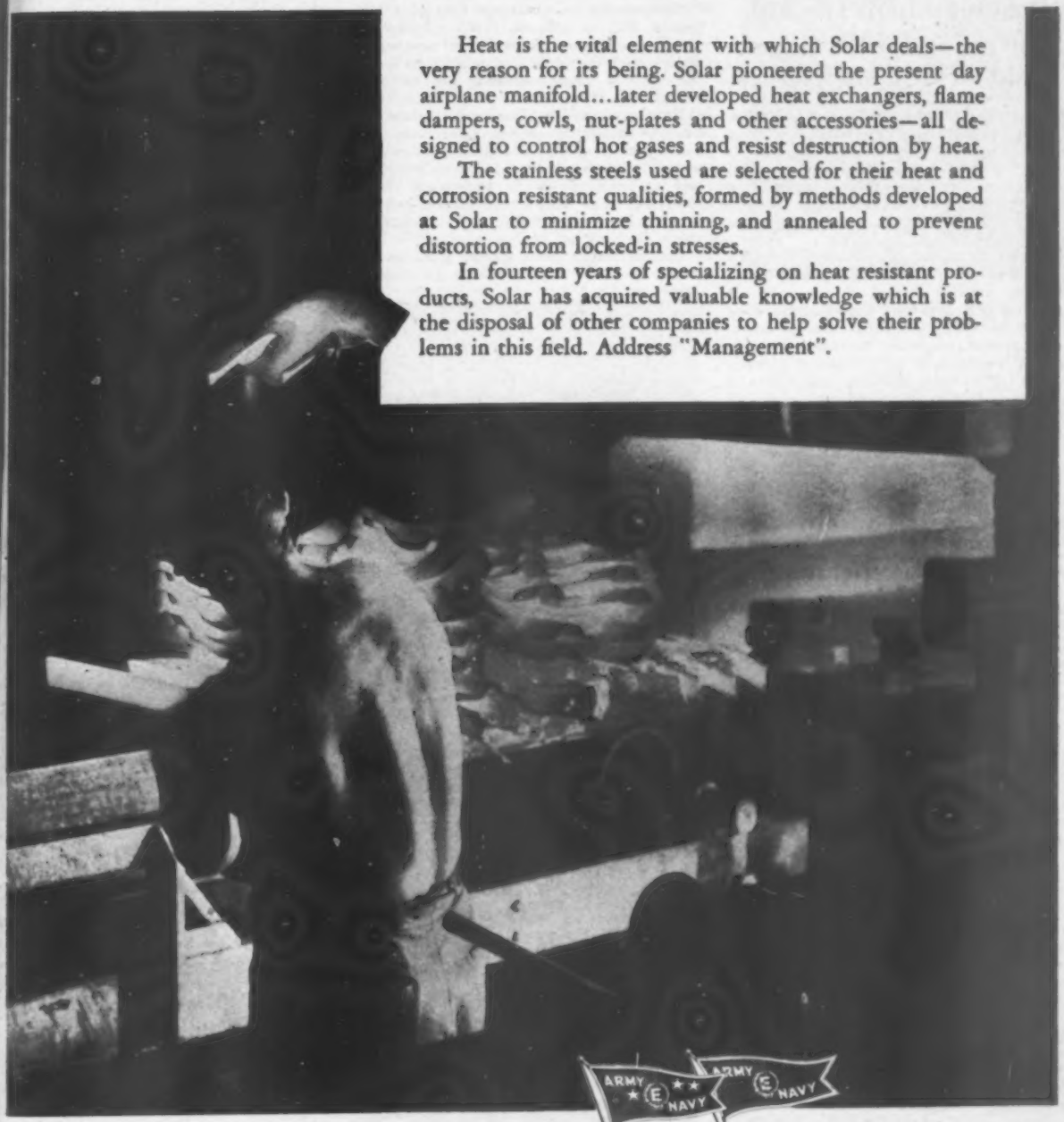

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Wing Loading Factor Looms As Major CAR Consideration

Relationship to Ton-Mile Operating Cost is Being Studied by CAA Experts

THE apparent relationship of airplane wing loading to ton-mile operating cost in commercial transport aircraft is now being given careful study by the Civil Aeronautics Administration in connection with the formulation of civil air regulations governing postwar passenger and cargo airplanes.

Charles F. Dycer, Chief of the CAA's Flight Engineering and Factory Inspection Division, explained that this concern is based on the apparent fact that as wing loading increases operating costs go down. CAA studies to date, he said, indicate that on the basis of wing loadings already in use in certain military operations it appears that ton-mile operating cost can be reduced to an amazingly low figure—the factor necessary for the airplane to reach the mass transportation market.

The effect of wing loading on landing speeds is aptly illustrated in a comparison of the Douglas DC-3 and the Boeing 377 (passenger version of the B-29). Wing loading on the DC-3 is approximately 25 pounds per square foot which results in a minimum landing speed of 67 miles per hour, compared with a wing loading of approximately 70 pounds per square foot for the Boeing 377 and a stalling speed somewhere in the neighborhood of 95 miles per hour.

Concerned With Safety

The CAA's concern with permitting higher landing speeds to allow for a higher wing loading is primarily one of safety. Dycer explained that such a change should be made only if the same or equal standards of safety are maintained in relation to present-day regulations governing commercial air transportation.

One major manufacturer has held that actual stalling speed is no longer applicable as a measure of airplane safety, what with such developments as better visibility from the cockpit, long airport runways, improved brakes and landing gear, new navigational aids and better built-in stability and control, particularly at speeds close to the stall.

This manufacturer states that many of the presently projected transports are using high wing loading in order to attain economy and speed, and "they are doing this in the belief that stalling speed is not a criterion of safety."

"In a certain design that we have laid out, we can prove that we have an airplane as safe or safer than any heretofore operated, yet it has such a high wing loading that it really is economical to operate, bringing fares down to a competitive level with surface transportation, and such a high cruising speed as to be phenomenal. Yet, if we were to conform to the present stalling speed requirements, this airplane would not be possible."

Primary safety factors requiring consideration before increasing the 80 mph limitation are the assurance that such airplanes will be able to reach a prepared landing area in the event of an engine failure and the ability of a pilot to locate the airport under unfavorable weather conditions, Dycer said.

He explained that emergency landings brought about by engine failure on terrain other than that prepared for landings would be almost certain to result in fatalities at landing speeds in excess of 80 mph and that this fact must be kept in mind when considering any changes in these limitations.

By the same token, Dycer said, an increase in the 80 mph limitation would increase the approach speed of 120 mph presently set for breaking out over an airport on an instrument operation. With the present commercial navigation facilities, it would become increasingly difficult to locate the airport and runways accurately at higher speeds under bad visibility conditions, thus increasing the danger of missing the airport completely.

An increase in ceiling and visibility limitations might provide an answer for the latter problem, at least until better navigational facilities are available, Dycer said. The optimum will be reached when navigational aids are developed which will lead the pilot directly to any selected runway under any weather conditions, which could then result in reduction or elimination of ceiling and visibility limitations.

With that accomplished, the increase in stalling speeds, coupled with satisfactory airport size, one-engine-out performance and airplane stability and controllability will result in an airplane that can be

Stratoliner Reborn—The first of five Stratoliners to be reconverted for use by TWA is shown at the top with new Flying Fortress wings, engines and landing gear. It now has an aggregate of 4,800 hp and will carry 38 passengers. In the middle photo a new wing and engine nacelles are being swung into place on one of the Stratoliners at the Boeing plant in Seattle. New horizontal stabilizers and elevators, flush with the rudder and the end of the tail cone were being installed when the lower photo was taken. The position of the original stabilizer assembly three feet forward is outlined on the Stratoliner's skin. If a TWA application for temporary certificate to operate between the United States and London, Cairo and Calcutta is approved the Stratoliners will fly the Atlantic. Otherwise, they will be reassigned to TWA's domestic route linking New York with Los Angeles and San Francisco.

safely operated at rates as cheap as five cents per ton mile, Dycer predicted. This compares with the present minimum of 30 cents per ton mile.

With respect to cargo airplanes, Dycer said that consideration is being given to the practicability of removing all stalling speed limitations, but that in any event reasonable one-engine-out performance and handling characteristics of the airplane should be maintained in order to afford adequate protection for the public living adjacent to airports and for the crews operating such aircraft.

Dycer said that proposed regulations were being formulated primarily for transport aircraft of new design and would probably have little effect on existing airplanes unless these were redesigned to increase wing loading.

Primary attention is being paid in this study to long-haul aircraft such as the DC-4, Boeing 377, Lockheed Constellation, Consolidated, and other projected postwar transport models, generally within the four-engine class. Study of new problems presented in connection with six and eight-engine aircraft projected for commercial use is also under way.

Dycer said that rapid advances made in the art of aircraft design must be taken into account in regulations governing civil aviation if full advantage is to be taken of these new developments, and added: "Every effort should be made to maintain regulations in such form that the splendid safety record of commercial aviation in the United States will be continuously improved and that simultaneously designers will be permitted to take advantage of new developments which will permit reduction in operating costs."

It is expected that proposals covering changes in existing requirements will be in shape early in February for distribution to aircraft manufacturers, airline operators, and pilots, and that meetings will be held with these groups to discuss these proposals shortly thereafter.

Kerosene, Not Gasoline

The Guiberson Diesel Engine Co., Dallas, Texas, has asked *American Aviation* to correct a misstatement in its advertisement in the Dec. 1 issue. It was stated that gasoline could be used as fuel for the heating unit of the R-101 oil heater. The use of gasoline would prove dangerous, the company points out. Kerosene or No. 1 distillate are proper fuels for use in the Model R-101.

Production Was Scheduled To Drop 2% in October But Actually Dropped 4%

Aircraft production in October, scheduled to drop two percent below September, actually dropped four percent, the War Production Board announces. The dollar value of October aircraft production was $1,466,000,000, a new low for the year. It missed meeting the latest (W-12) schedule by three percent.

"Failure of aircraft to meet its schedule in recent months has been concentrated for the most part in comparatively few hard-to-make models with steeply rising schedules, such as the B-29 Superfortress, B-32 Dominator, A-26 Invader and C-54 Skymaster," the WPB announcement stated.

The airframe weight of the 7,429 planes accepted in October was 87,800,000 pounds (including spare parts) or 2½% below the September output. Airplane engine deliveries at $319,000,000 were three percent short of the new engine schedule (WE-12). Superbomber engine deliveries were one percent below schedule.

Communication and electronic equipment was up five percent over September but fell six percent short of schedule. Airborne-radio production for the Army Service Forces was up 12 percent and only three percent short of schedule.

Radar equipment production improved in October as compared to September. It was up four percent, but still lagged behind schedule by eight percent.

J. A. Harris, III, Elected President of Jacobs Co.

J. Andrew Harris, III, has been elected president of Jacobs Aircraft Engine Co., Pottstown, Pa. and was to take office Jan. 1. H. B. Knerr, treasurer, has been named general manager and A. R. Thomas assistant general manager. Harris was formerly chairman of the Board of Directors.

The reorganization coincides with the termination of the company's management contract with Ford Bacon and Davis—an engineering firm which was retained at the start of the War to supervise the construction of a new plant for Jacobs, and to be responsible for the operation of the plant.

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Surplus Plane Disposal Policies Revised Following Chicago Meeting

Foreign Allocations Will Conform With State Dept. Desires

FAILURE of the International Aviation Conference at Chicago to agree on some of the major issues relating to post-war international aviation has brought about a revamping of surplus plane disposal policies in the United States as it affects foreign applicants.

While some phases of the picture still are confused because of the shake-up in State Department personnel, some definite moves reveal that surplus plane allocation to foreign countries will be tied closely to State Department foreign policy and national security measures.

This change comes about through the issuance of an order by the Office of the War Mobilization Director transferring responsibility for making foreign plane allocations from the Foreign Economic Administration to the State Department and the Army and Navy. While the Surplus War Property Administration actually will make the allocations, they will be on the basis of recommendations of the State Department in consultation with the War and Navy Departments.

National security in the postwar era bulked large in deliberations at the International Conference. Because of the failure of the United States and Britain to agree on several important issues, the future U. S. course on disposal of surplus war goods appears to have been altered to meet conditions as they actually exist. As a result, the Army and Navy will assume an ever-increasing degree of influence which probably will extend beyond surplus disposal to laying out this country's proposed international air routes.

One highly placed U. S. government official, commenting on the effect of these moves as they relate to surplus property disposal abroad, said:

"I do not think it will affect too greatly surplus plane disposal abroad except it may result in a shifting of the hats that certain countries wear."

This was construed to mean that surplus plane allocations will probably be made on some sort of a reward and punitive basis depending on the degree of support that this country's international air program received from the various national delegations that attended the conference.

Meanwhile as new surplus disposal policies were being ironed out, the Surplus War Property Administration was going ahead with its plans for allocating 62 more transport planes that have been declared surplus by the Army and Navy. Of this number, 43 are the Douglas DC-3 type and 19 are Lockheed Lodestars. A considerable number of the planes are to be allocated to foreign applicants, it has been learned. National Airlines announced that it would receive four of the Lodestars. Two charter operators were to receive one Lodestar each for use in transporting freight for war industries.

Contract Adjustment Claims May Be Settled Quickly By Adhering to ATSC Program

The Air Technical Service Command, Wright Field, reports that it has made direct contact with every prime contractor holding AAF contracts in excess of $10,000 as the first step of an advanced planning program designed to assist contractors to quick and final settlement of contract adjustment claims.

ATSC officials said that "only if contractors and their subcontractors are completely familiar with the important part they must play in the adjustment of war contracts, can adaptation to the changing requirements of a fluid warfare be adequately and promptly met."

The contractor training program has been stepped up each month since the activation on July 1 last of the readjustment division of ATSC, which is charged with the adjustment and settlement of AAF contracts, and the clearance from contractor's plants of termination inventory.

20 Military Type Planes Declared Eligible For Civil Certification

The Civil Aeronautics Authority has declared an additional 20 military type aircraft eligible for civil certification. Tests to determine eligibility of the craft for civilian use are being carried on at Vandalia, O., on the basis of their similarity to approved civil models.

Following are the additions to the original list which appeared in *American Aviation* Nov. 1:

Army Model	Equivalent Civil Model
Fairchild UC-61	24W-41
" UC-61A	24W-41A
" UC-61B	24J
" UC-61C	24R-9
" UC-61E	24K
" UC-61F	24W-9
" UC-61G	24W-40
" UC-61H	24G
" UC-61J	24C8-F
Harlow UC-80	PJC-2
Interstate XL-6	S1B1
Lockheed UC-85	Orion 9D-2
" UC-101	Vega 5-C
Piper L-4C	J3L-65
" L-4E	J4E
Pratt-Read TG-32 (Glider)	PRG-1
Stinson L-12	SR-5A
" L-12A	SM-7B
Taylorcraft L-2E	DF-65
Waco UC-72C	HRE

Cessna Nets $1,102,039

Cessna Aircraft Co., Wichita, Kan., reports total income for the fiscal year ended Sept. 30, 1944 as $40,617,938; total costs and expenses, $39,515,899; and net income to earned surplus, $1,102,039.

Under earned surplus, the company reported a balance on Oct. 1, 1943 of $3,279,283, additions of $1,102,039 in net income and $101,870 for prior years income and tax adjustments with deductions of $1,750,000 representing transfer to Capital accounts as a result of issuance of a stock dividend, $280,000 for a cash dividend paid on common stock at 40 cents a share, and $1,205,746 representing adjustment due to Renegotiation settlement, fiscal year 1943, leaving a balance on Sept. 30, 1944 of $1,247,446.

Clayton Takes Over Job Held by Berle

W. L. Clayton, formerly administrator of the Surplus War Property Administration, has assumed his new duties as assistant secretary of state in charge of foreign economic relations, including international aviation. He was confirmed by the Senate Dec. 19 by a vote of 52 to 19.

Clayton will assume duties formerly performed by Adolf A. Berle who distinguished himself at the International Aviation Conference in Chicago as head of the American delegation. Berle announced his resignation as assistant secretary of state during the progress of the convention a few days before President Roosevelt named Edward R. Stettinius as secretary of state.

'Butterfly Tail'— A plane without either horizontal or vertical tail surfaces has been developed and test flown by the Beech Aircraft Corp., Wichita, Kan. The purpose of the experimental tail unit is to investigate the possibilities of simplified structure, elimination or reduction of compressibility effects at high speeds, simplified controls, and the effect on control, stability and handling ease which may be offered by such radical departure from conventional construction. The plane is a modified AT-10 Beechcraft plywood transitional trainer.

SAE Detroit Meeting Will Feature Talks On Local Transport

A symposium on postwar local air transport will be a feature of the annual meeting of the Society of Automotive Engineers, scheduled for Jan. 8-12 at the Book-Cadillac Hotel in Detroit. Representatives of aircraft manufacturers and operators, and of other business enterprises, will discuss the type of planes required.

Another symposium, concerned with aircraft cockpit engineering, is expected to produce data on ways and means of equipping the plane's control center for the most convenient and efficient operation. Aircraft sessions at the meeting will feature the presentation of papers on electronic controls, hydraulic braking systems, and related subjects.

Standardization in the manufacture of both land and air vehicles will be discussed, and numerous technical papers will be concerned with water-alcohol injection as a part of automotive developments, heated wings for aircraft, trends in airport design, and basic factors of helicopter design.

Following are the speakers and the subjects of their papers:

Monday, Jan. 8—"The Future of Standardization in the Aeronautical Industry," by Arthur Nutt, Packard Motor Car Co., Toledo Division.

Tuesday, Jan. 9—"Electronic Indicator-Aircraft Engines," J. W. Street, Wright Aeronautical Corp.; "Detonation in Flight, Its Effect on Fuel Consumption and Engine Life," P. J. Costa, Sperry Gyroscope Co.; "Detonation Indicating Equipment Used on the Allison Engine," J. M. Whitmore, Allison Div., General Motors Corp.; "Coordinated Engine Control Mechanisms," John Dolza, Allison Div., General Motors Corp.; "The Primary Balancing of Radial Engines," G. L. Williams and A. B. Miller, Pratt & Whitney Aircraft Div., United Aircraft Corp.; "International Aircraft Airworthiness Requirements," Edward Warner, Civil Aeronautics Board.

Wednesday, Jan. 10—"Basic Factors of Helicopter Design," R. H. Prewitt, Kellett Aircraft Corp.; "Application of Aero-Economic Factors to Specific Aircraft Design," J. B. Kendrick, Lockheed Aircraft Corp.; "Flow Characteristics of Induction Systems," A. P. Fraas, Packard Motor Car Co.; "Some Possibilities of Turbine Compounding with Piston Engine," C. F. Bachle, Continental Aviation Engineering Corp.

Thursday, Jan. 11—"Report on Development and Application of Heated Wings," Lt. Myron Tribus, Equipment Lab., Air Technical Service Command; "Some Experiences with Law Drag Airfoils," E. J. Horkey, North American Aviation, Inc.; "Proposed Electronic Controls for Aircraft," Lt. R. J. Colin, Jr., Electrical Lab., Air Technical Service Command; "Electronic Analysis of Airplane Hydraulic Braking Systems," Duncan Gardiner, Vickers, Inc.; "Aircraft Lighting," Maj. A. D. Dircksen, Air Technical Service Command; "Psychological and Physiological Aspects of Cockpit Engineering from the Pilot's Viewpoint," Dr. R. A. McFarland, Division of Research, Graduate School of Business Administration, Harvard University; "Control Cabin Development," Ken Gordon, Boeing Aircraft Co.; "Making the Cockpit Practical for the Pilot," G. F. Beal, Northwest Airlines.

Friday, Jan. 12—"Defining the Market for Aircraft for Local Air Transport Service (symposium);" "Airport Design vs. Aircraft Performance," Arthur Ayres, Pan American Airways; "Trends in Airport Runway Design," Paul Stafford, Civil Aeronautics Administration.

Details of Hamilcar Glider Released by Great Britain

Details of the British Hamilcar Glider, produced by General Aircraft, Ltd., have been released by the British Air Ministry. Described as the world's largest wooden aircraft, the glider can carry almost its own weight in useful military load. It weighs 36,000 lbs. fully loaded, of which 17,500 lbs. represents the load.

With its nose opening to form a door, the Hamilcar is able to discharge its cargo in record time after landing in hostile territory. Just before landing, armored vehicles carried in the glider are started up and the engines kept running until the glider lands. Within 15 seconds after the aircraft comes to rest, the vehicles can be driven out without special ramp equipment.

Halifax bombers are used to tow the gliders. A special chassis, weighing ¾ ton, is provided for takeoff. It was originally planned to drop this by parachute after take off to reduce weight, but because of the restricted landing areas in Normandy—where the gliders first saw action—the chassis was retained and specially designed to lower the glider on to skids the moment it stopped, so that tanks and vehicles could be driven out.

The glider is large enough to accommodate a Tetrarch Mark IV Tank or an American Locust Tank, or a complete scraper and tractor can also be carried.

Gets Maryland Position

William McK. Reber, Jr., former chief flight and ground training analyist of the CAA, has been appointed to the Maryland State Aviation Commission. Reber had been with the CAA for three years, and prior to his work as an analyst, he was stationed at La Guardia Field, where he served as senior regional ground school supervisor for the CAA-War Training Service. He is a certificated pilot and holds all CAA ground instructor ratings.

Air Commission Revamped

E. W. Stanford, director of the Alabama State Aviation Commission, has released the following revised list of members of the commission: W. Hayden Brooks, chairman, Birmingham; Frank W. Hulse, Decatur; Harold F. Wood, Birmingham; Colgan H. Bryan, Tuscaloosa; Robert G. Pitts, Auburn. Bryan and Pitts succeed O. N. Barney of Mobile and J. B. Carl of Tuscaloosa, resigned.

Redesignated Entry Port

The Odgensburg Municipal Airport, Ogdensburg, N. Y., has been redesignated as an airport of entry for civil aircraft and merchandise arriving thereon from points outside the U. S., according to the Bureau of Customs. The designation is effective for one year from Dec. 10, 1944.

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Iowa Company Develops Cartridge Type Catapult for Air Mail Operations

A MAN PLOWING a field, a transport plane overhead and an idea embrace a combination of fact and circumstance which led to the development of a pickup device which some believe may help provide air mail service to many isolated communities.

Louis P. Wulf, Lost Nation, Ia., farmer, lives on the transcontinental route of United Air Lines. With regularity, Douglas DC-3s pass over his farm. The noise of their motors frequently set him to thinking about the wonders of air transportation—of Lost Nation's proximity to the finest travel communication in the world—yet its seemingly hopeless position of ever realizing its benefits.

Wulf knew that for economic reasons, the transports probably never would stop at a town with only 500 population but he thought there ought to be some way that planes could swoop down, pick up mail and express, and continue on their way. He started tinkering with a device that would catapult a small package to a plane in flight.

His first device was a hay-wire contraption. Using the basic idea of the catapult, he employed springs in an attempt to make it work, but springs were too variable in their recoil because temperature changes affected the steel. Likewise, it was difficult to adjust their tension accurately to different sized loads.

Next he tried specially made rubber bands. These worked more satisfactorily but trouble of temperature changes and tension still occurred. Then he tried compressed air and that was successful to a large degree, but the ground installation costs were regarded as being prohibitive. Later he went to the explosive actuation of the catapult which many qualified observers declare is the ideal propellant.

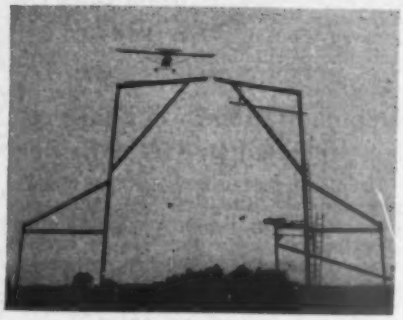
It is around this device that Automatic Air Mail, Inc., of Lost Nation, has built its application for air mail pickup routes in the north-central states. The company's application has been consolidated with those of other companies which seek to obtain air transportation certificates in that general area and hearings are scheduled to start before the Civil Aeronautics Board examiners March 5.

Hundreds of Tests Made

Hundreds of successful operation tests have been made by the company and further tests are still being conducted. The ground installation consists of a tower about 40 feet high on which is installed the cannonlike catapult. The pickup parcel is placed in this cylinder and the gun loaded with a cartridge. At the top of the tower is a device which sets off the explosive charge as the trailing cable of the plane enters the slot.

The explosion shoots the parcel at a speed synchronized with the speed of the ship. The incoming parcel then is attached to a small windlass in the plane.

Some 200 feet away and on the approach side of the tower are two uprights of the maximum height of the tower. Guide cables from these uprights, which converge in a V shape, direct the pickup cable from the plane into the firing slot on the tower. This, it is claimed, makes it simple for the pilot to make his contact even though his plane does not pass directly over the exact center of the tower.



Catapult Station

Since the cartridge idea was put into use, an improved breech lock has been perfected. This device permits firing of one or more or all of the cartridges depending on the weight of the load to be picked up. Weight variances are also compensated for by increasing or decreasing the explosive content of the cartridges. The cartridges resemble a common shotgun shell with the shot removed. In fact, in the early experiments a shotgun shell was used.

In its application for license to operate two pickup routes from Moline, Ill., across Iowa to Omaha, Neb., the company proposes to use single engine planes and fly on a schedule of about 110 miles per hour. Each ship will be constructed with a sliding door in the bottom of the fuselage, which can be opened and closed to make the contact with ground installations. A helper lowers the cable with the deposit bag attached and when the pickup is made reels in the cable on a windlass driven by a small electric motor.

Company officials and its technical experts estimate the ground installations for the 70 towns on the two routes will cost approximately $250 each. While it is only proposed to operate by daylight at the outset, plans are being made for experimental night flights, through use of neon lighting on the towers.

The company believes that the advantage of night operations lies primarily in the fact that about 85 percent of the daily air mail is posted at the close of the day's business.

Each station on the routes will have a parttime employe to carry the mail and other property from the postoffice to the pickup tower where he will place it in the catapult and return with the incoming package. These individuals will be equipped with short wave walkie-talkie radios of sufficient range to contact incoming ships several miles away. The main purpose of this is to advise the helper in the plane the weight of the parcel to be picked up.

Army Describes Pickup Of Humans at 130 MPH

The Army has issued a three-page release describing more than a year of experimental work in developing a device and procedure for picking a human being from the ground by plane while the plane is in flight. Starting with dummies, then using sheep because of their delicate physical structure, the Army finally mastered a technique that will lift a human being off the ground with no more of a jolt than is experienced in jumping stiff-legged from a chair. A few months ago, London newspapers commented that the pickup device was being used in liberating patriots from behind the German lines in occupied countries and obtaining intelligence on German activities. Current pickups are being made at a speed of 130 miles an hour. Lt. Alexis Doster, a paratrooper, who was the first man to be picked up Sept. 5, 1943, has since died of infantile paralysis. Medical authorities determined that his death was in no way connected with his pickup experience. The pickup device was developed by the late Richard C. duPont at Wilmington, Del. It is an enlarged version of the equipment employed by All American Aviation on its mail pickup routes.

Albert F. Beitel, former CAB examiner who with Examiner William J. Madden conducted the Board's Local-Feeder-Pickup investigation, is the company's Washington counsel. Beitel recently visited Lost Nation, saw the pickup device in operation and rode in the plane during pickup operations.

Plan California Commission

The California State Assembly Aviation Interim Committee has announced plans for a state aviation commission, following a meeting with industry representatives in Los Angeles. William H. Rosenthal, committee chairman, said the commission's initial functions would include airport zoning, fostering airport construction, preparation and administration of a simplified system of licensing private and commercial flyers, founding aviation classes in public schools, and exploring the problem of securing equipment for use in such classes. The commission proposal will be presented to the California State Assembly in January.

Blanton AAF Resident at Wright

Lt. Col. Thomas J. Blanton has assumed his duties as AAF resident representative at Wright Aeronautical Corp., succeeding Lt. Col. C. R. Borkland, who has been assigned to the office of the commanding officer, Eastern District, with duties in the office of the deputy commander. Col. Blanton recently returned to the U. S. after more than two years as procurement officer in England.

Manufacturing Personnel

Sylvander Barlow

Sam J. Irvine, former vice president and general manager, has been named president and general manager of Aero Supply Mfg. Co., of Corry, Pa. Irvine succeeds the late **Frank N. Ames,** deceased.

Jack T. Dalton has been appointed eastern district manager for the New York territory of Bendix Radio Division, Bendix Aviation Corp. He formerly was eastern sales manager for the Crosley Radio Corp. and the Grigsby-Grunow Co. The Pacific Division of Bendix announces that **Daniel T. Boody** has been promoted to the sales department after four years with the engineering and tool design departments; **William P. Harrison,** formerly eastern service engineer, will be midwestern representative for Pacific Division hydraulic and electric equipment; and **Edward M. Nash** has joined the division after serving Lockheed and, immediately prior to that, the Fifth Air Force Service Command.

George C. Ford has been appointed works manager of Consolidated Vultee Aircraft Corporation's Vultee Field Division. Convair also announces: **Frank J. Heidemann** is the new night factory superintendent at the Fort Worth Division; **James H. Whitaker** has been named general supervisor in the industrial engineering department at New Orleans; **Bertram H. Osgood** has been appointed supervisor of the plant layout section of the Miami Division; **Gavin Alexander, Jr.,** is the new purchasing agent of the Allentown Division; **Vernon E. Groves,** former Royal Canadian Air Force Flight lieutenant, has been named chief of flight at Convair Field, Allentown; and **Galen P. Potter** has been transferred from Vultee Field, Calif., to become assistant superintendent in charge of field operations for the Allentown Division.

Roy C. Sylvander, chief engineer of Bendix Aviation Corporation's Eclipse-Pioneer Division, has been named director of engineering, succeeding **W. A. Reichel,** who recently resigned.

Leopold H. P. Klotz, vice president and treasurer of Luscombe Airplane Corp., has been elected president of the company, succeeding **A. C. Hastings, Jr.,** who retired December 1.

Aircraft Accessories Corp. Changes Name To Aireon Manufacturing Corporation

AIRCRAFT Accessories Corp. has changed its name to Aireon Manufacturing Corp. to more adequately describe the scope of its manufacturing activities.

The extent of the company's manufacturing field has expanded beyond the limitations implied in the name, Aircraft Accessories Corp., according to R. C. Walker, president. He said that while Aireon contemplates continued substantial production of aircraft and electronic equipment, it has developed a number of new products which it is prepared to manufacture and market as soon as materials are released.

Aircraft Accessories was founded in 1937 as a West Coast distributor of aircraft parts and accessories. It soon dropped its accessory franchises and devoted itself entirely to the design and manufacture of hydraulic actuating equipment for aircraft. In 1939 the company established an electronics division at Kansas City which was expanded into a large manufacturer of radio equipment for the airlines and armed services.

Aireon Manufacturing Corp. will continue operations of both divisions under its postwar program, according to Walker.

Supply Company Formed

Aviation Supply Co., Albee Building, 1426 G St., N.W., Washington, D. C., has been organized by E. Lloyd Ettenger and Cecil G. Coppage to function as a specialized aviation manufacturers representative, dealing in planes, aeronautical equipment, material and supplies.

W. Cortlyn Rhodes has been named chief production engineer of the manufacturing division of Air Associates, Inc.

G. B. Barlow has been appointed comptroller of Douglas Aircraft Company's El Segundo plant. Previously work of the comptroller was done at Santa Monica.

Richard E. Gould, of the Frigidaire Division of General Motors, has been named chief engineer of the Aeroproducts Division of GM.

B-H
MANUFACTURERS OF SHEET METAL AND TUBULAR ACCESSORIES
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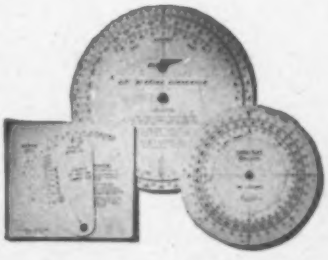
Aircraft Computers



RADIUS OF ACTION—Determines the time and distance from a fixed base.

TIMED TURN—Indicates time of turn in seconds, angle of turn and the new heading, when making standard approach turns.

D/F BEARING—Converts relative QDM and QDE direction finder bearings.

COX AND STEVENS AIRCRAFT CORPORATION

P. O. Box 30 Mineola, N.Y.

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Manufacturing Roundup

Republic Plant Needs 500 Workers

The Farmingdale plant of Republic Aviation Corp., needs 500 additional men and women workers for day and night shifts to produce the new long-range P-47 Thunderbolt, according to C. Hart Miller, vice president and division manager. Experienced workers as well as trainees are needed in sub-assembly, fuselage and wing shops together with sheet metal workers, machinists, accountants, draftsmen, file clerks, porters, partsmen, and janitors. Applicants should apply at the Farmingdale plant, Broad Hollow Rd. and Conklin St., Farmingdale, L. I.

P-38s Converted for Reconnaissance

An undisclosed number of P-38s have been converted into high speed reconnaissance aircraft at the Bechtel-McCone Corp. plant at Birmingham, Ala., according to a company announcement. The plane is called the F-5.

Boeing B-17 Carries 70 Men

Seventy airborne infantrymen and airborne anti-aircraft personnel recently made a cross-country flight in one Boeing B-17 Flying Fortress, Boeing Aircraft Co. announces. Each man carried a carbine, raincoat, blanket, pack, rifle belt, canteen, and first aid packet. There was one barracks bag to every three men.

3,000 Liberators and C-87s Produced

More than 3,000 B-24 Liberators and C-87 Liberator Express transports have rolled from assembly lines of Consolidated Vultee Aircraft Corporation's Fort Worth division to world battlefronts since production on them started early in 1942, the company announces.

Switlik Wins Award for 4th Time

Switlik Parachute Co has won for the fourth time the Army-Navy Production Award for outstanding achievement in producing materials essential to the war effort.

Honeywell Completes 30,000th Autopilot

Completion of the 30,000th electronic automatic pilot for precision bombing aircraft is revealed by the Minneapolis-Honeywell Regulator Co. Started in the spring of 1941, the first production unit was installed on a Flying Fortress January 1, 1942, less than a month after Pearl Harbor.

Sperry Obtains Airfield

Sperry Gyroscope Co. has obtained an airfield at Islip, L. I., for field tests, and to provide facilities for sales demonstrations and flight training of certain specialized personnel. The field will have three runways, each a mile long and so constructed that landing and takeoff will be possible in both directions.

Duramold Moves to Jamestown

Operations of the Duramold Division of Fairchild Engine and Airplane Corp. are being moved to Jamestown, N. Y., from New York City to occupy the plant formerly used by American Aviation Corp.

P. & W. Engines in Action

Pratt & Whitney Aircraft Corp. of Missouri discloses that the 2100 hp engines built at the Kansas City plant are now in action on the western front, and that another hike in the monthly production rate in November has led the Navy's bureau of aeronautics again to revise upward manufacturing schedules throughout 1945 for Pratt & Whitney engines.

Republic Gets Certificate

Republic Aviation Corp., has been awarded the certificate of service from the AAF's Eastern Technical Training Command. The award was presented to Alfred Marchev, Republic president, by Capt. Elza W. Nave, area training supervisor of the command, and Lt. Elbert M. Taylor, assistant to the captain. The award was made in recognition of the meritorious service rendered in the AAF training program.

Curtiss-Wright Changeover

The Louisville plant of Curtiss-Wright Corp. is undergoing a complete changeover in operations in a switch from C-46 Commando production to modification of B-29 Superfortresses. The C-46 contract is expected to be completed by mid-1945. The first B-29 was expected to reach the plant this week. Air Technical Service Command officials said the Louisville plant was selected because of arrangement of the factory which permits straight line modification of the B-29 with a minimum change to present facilities, and the adaptability of adjacent Standiford Field for the Superfortresses.

Cannon Gets AAF Rating

In addition to the two stars now on their Army-Navy "E" flag, Cannon Electric Development Company has received an "Approved" Inspection rating from Major E. P. Higbee, Army Air Forces, Air Technical Service Command, for a period of six months. The "approved" rating can only be assigned to a plant that expends every possible effort to institute and maintain all practical controls possible to the end that the utmost in quality of products produced are achieved.

G M Section Transferred

General Motors Aircraft Development Section, directed by Don Berlin, will be transferred to the Allison Division, Indianapolis, Ind., Feb. 1. The aircraft development section is presently operating under Fisher Body Division. The move completes plans long under development to provide Allison Division with experienced aircraft personnel and suitable facilities for the development and test of engine applications in airplanes. Although Allison's work is presently confined to military requirements, work will begin as soon as possible on applications of Allison engines to commercial aircraft.

Classified

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AIRLINE DRAFTSMEN. Immediate positions with a commercial airline available to men experienced in aeronautical design, accessory equipment installation, architectural, structural, or mechanical drafting. State qualifications in letter. Box 419, American Aviation, American Bldg., Washington 4, D. C.

WATCHES WANTED. Broken or usable, all kinds, even Ingersolls, highest prices paid for jewelry, rings, spectacles, alarm clocks, razors, cigarette lighters, gold teeth, etc. Cash mailed promptly. Lowe's Holland Bldg., St. Louis 1, Mo.